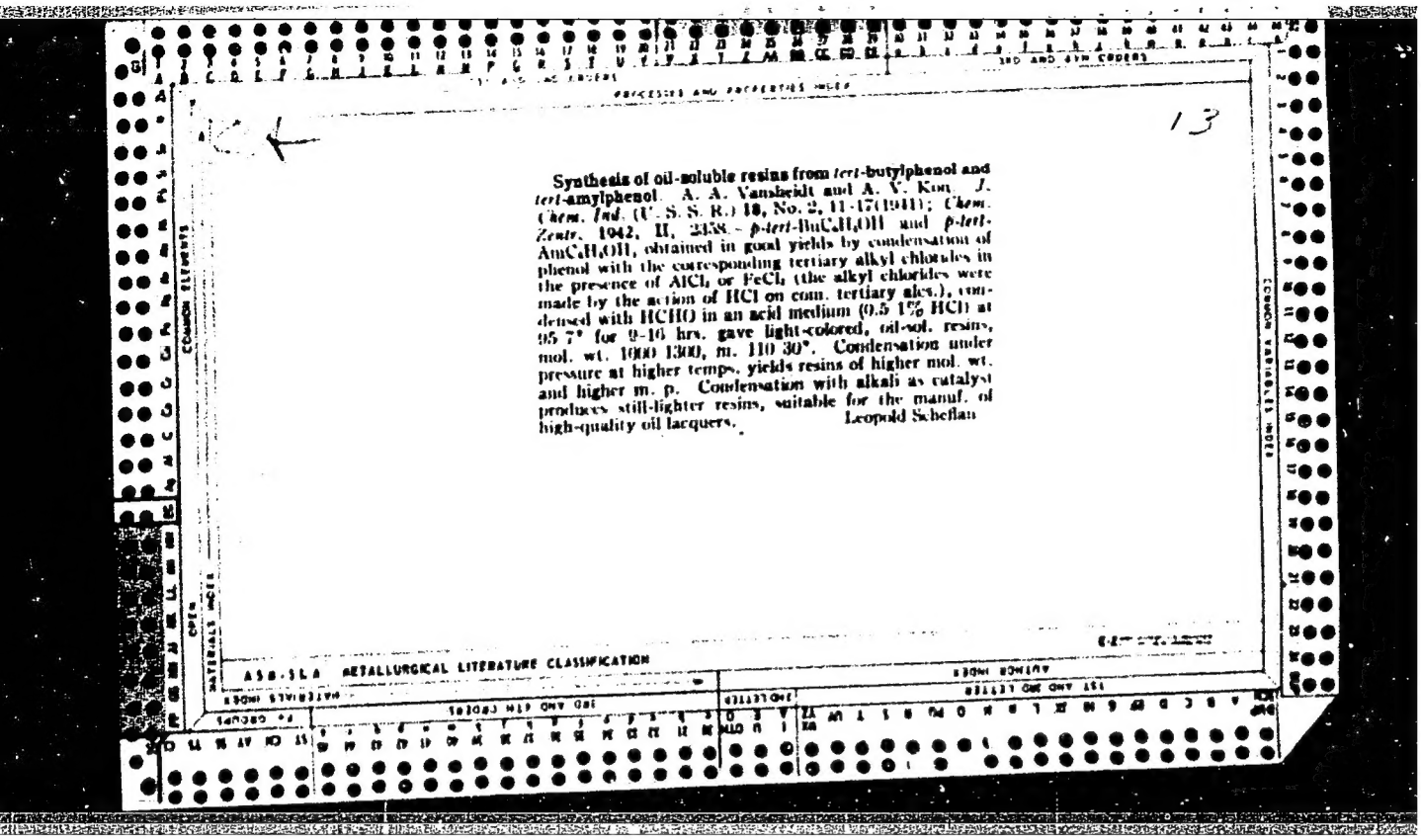
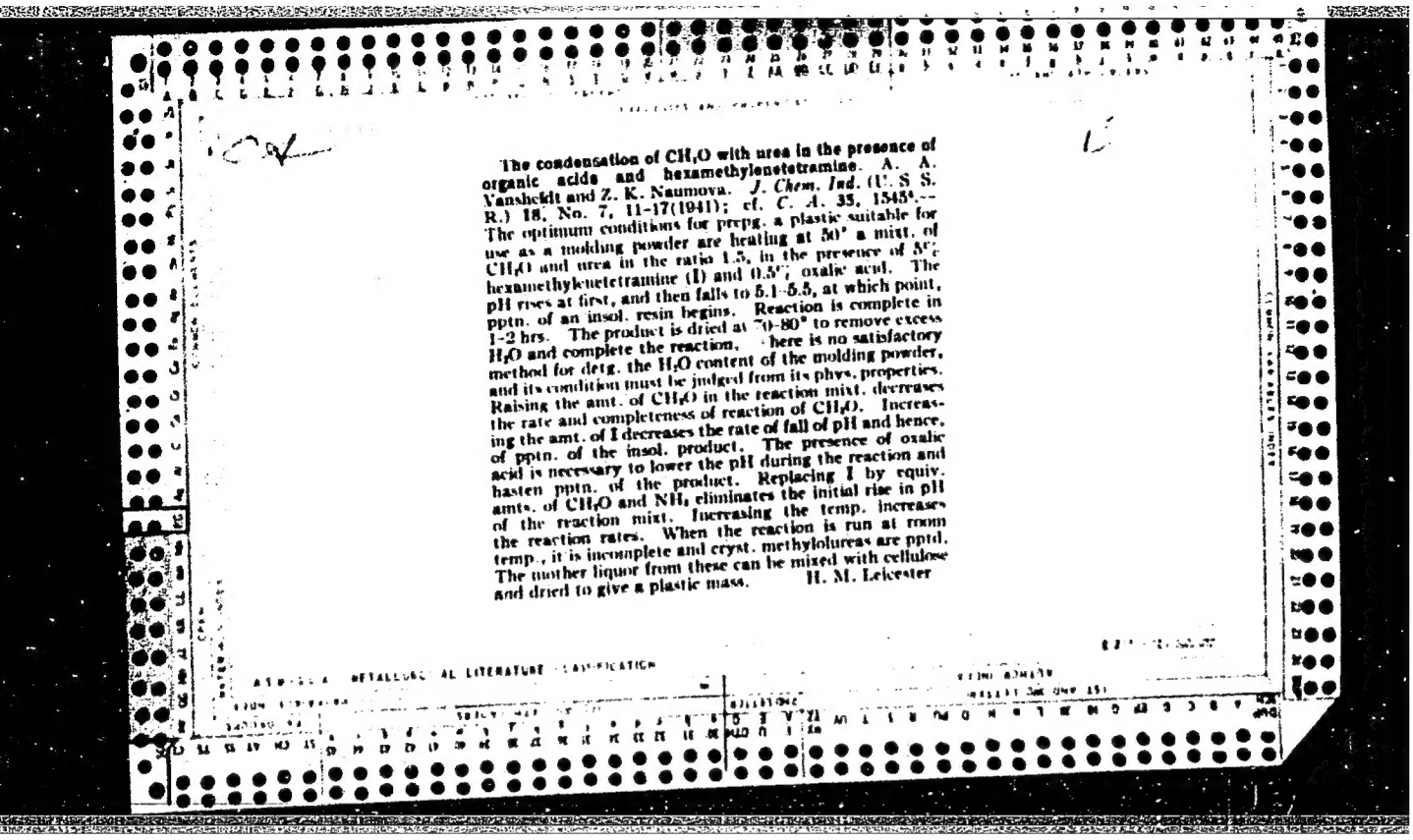


Synthesis of oil-soluble resins from *tert*-butylphenol and *tert*-amylphenol. A. A. Vansheidt and A. V. Kon. *J. Chem. Ind.* (U. S. S. R.) **18**, No. 2, 11-17(1941); *Chem. Zentr.* 1942, II, 2338. – *p*-*tert*-BuC$_6$H$_4$OH and *p*-*tert*-AmC$_6$H$_4$OH, obtained in good yields by condensation of phenol with the corresponding tertiary alkyl chlorides in the presence of AlCl$_3$ or FeCl$_3$ (the alkyl chlorides were made by the action of HCl on com. tertiary alcs.), condensed with HCHO in an acid medium (0.5 1% HCl) at 95 7° for 9-16 hrs. gave light-colored, oil-sol. resins, mol. wt. 1000 1300, m. 110 30°. Condensation under pressure at higher temps. yields resins of higher mol. wt. and higher m. p. Condensation with alkali as catalyst produces still-lighter resins, suitable for the manuf. of high-quality oil lacquers. Leopold Scheflan



The condensation of CH_2O with urea in the presence of organic acids and hexamethylenetetramine. A. A. Vanshcidt and Z. K. Naumova. *J. Chem. Ind.* (U. S. S. R.) 18, No. 7, 11–17(1941); cf. *C. A.* 35, 1545⁹.—The optimum conditions for prepg. a plastic suitable for use as a molding powder are heating at 50° a mixt. of CH_2O and urea in the ratio 1.5, in the presence of 5% hexamethylenetetramine (I) and 0.5% oxalic acid. The pH rises at first, and then falls to 5.1–5.5, at which point, pptn. of an insol. resin begins. Reaction is complete in 1–2 hrs. The product is dried at 70–80° to remove excess H_2O and complete the reaction. There is no satisfactory method for detg. the H_2O content of the molding powder, and its condition must be judged from its phys. properties. Raising the amt. of CH_2O in the reaction mixt. decreases the rate and completeness of reaction of CH_2O. Increasing the amt. of I decreases the rate of fall of pH and hence, of pptn. of the insol. product. The presence of oxalic acid is necessary to lower the pH during the reaction and hasten pptn. of the product. Replacing I by equiv. amts. of CH_2O and NH_3 eliminates the initial rise in pH of the reaction mixt. Increasing the temp. increases the reaction rates. When the reaction is run at room temp., it is incomplete and cryst. methylolureas are pptd. The mother liquor from these can be mixed with cellulose and dried to give a plastic mass. H. M. Leicester

Distr: 4E3b/4E3d/4E2c(j)

Investigation of radical polymerization processes in the presence of foreign substances. I. Effect of organic halogen compounds on the polymerization of vinyl acetate. A. A. Vansheidt and Gyula Khardi (Research Inst. Org. Chem. Ind. Plastics Ind., Budapest). *Acta Chim. Acad. Sci. Hung.* 20, 261-73(1959)(in Russian).—In the polymerization of vinyl acetate promoted by Bz_2O_2, chain-transfer consts. were calcd. from $1/P = 1/P_0 + C[xy]/[M]$, where P is the av. degree of polymerization of the polymer formed in the presence of a foreign substance, P_0 is the av. degree of polymerization of the polymer formed in the absence of the foreign substance, $[xy]$ is the concn. of the foreign substance, $[M]$ is the concn. of the monomer, and C is the chain-transfer const. The values found were: $CHCl_3$ 0.0554, CCl_4 0.2023 $CBrCl_3$ 0.6303, $CHBr_3$ 3.476, CBr_4 2.874, MeI 0.123, 1,2-$Cl_2C_2H_4$ 0.00102, 1,1,2,2-$Cl_4C_2H_2$ 0.006772, C_2HCl_3 0.1384, C_2Cl_4 0.121, 1,2-$Br_2C_2H_4$ 0.0134, C_2Cl_4 0.0465, C_2HCl_3 0.3810, C_2Br_4 0.280, C_2HBr_3 3.472, BuBr 0.1100, PhCl 0.000261, *p*-$Cl_2C_6H_4$ 0.00118, $PhCH_2Cl$ 0.0584, PhBr 0.01342, *o*-ClC_6H_4Me 0.009286 *p*-ClC_6H_4Me 0.01950, dichloroethyl ether 0.0245, $ClCH_2COOH$ 0.255, $BrCH_2COOH$ 0.445, CCl_3COOH 0.1445, $CCl_3CHO.H_2O$ 0.4312, CCl_3CHO 0.4927 BzCl 0.030, 1,3,3,3-tetrachloropropyl acetate 0.04232. The most active chain-transfer agents are the halogen derivs. of CH_4, because in these the bond energy between halogen and C is small. In general the asymmetric derivs. are more active. The aromatic halohydrocarbons are less active than the aliphatic because of the greater bond energy between C and halogen in the aromatic compds. E. Kasrteiner

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2g (W B)
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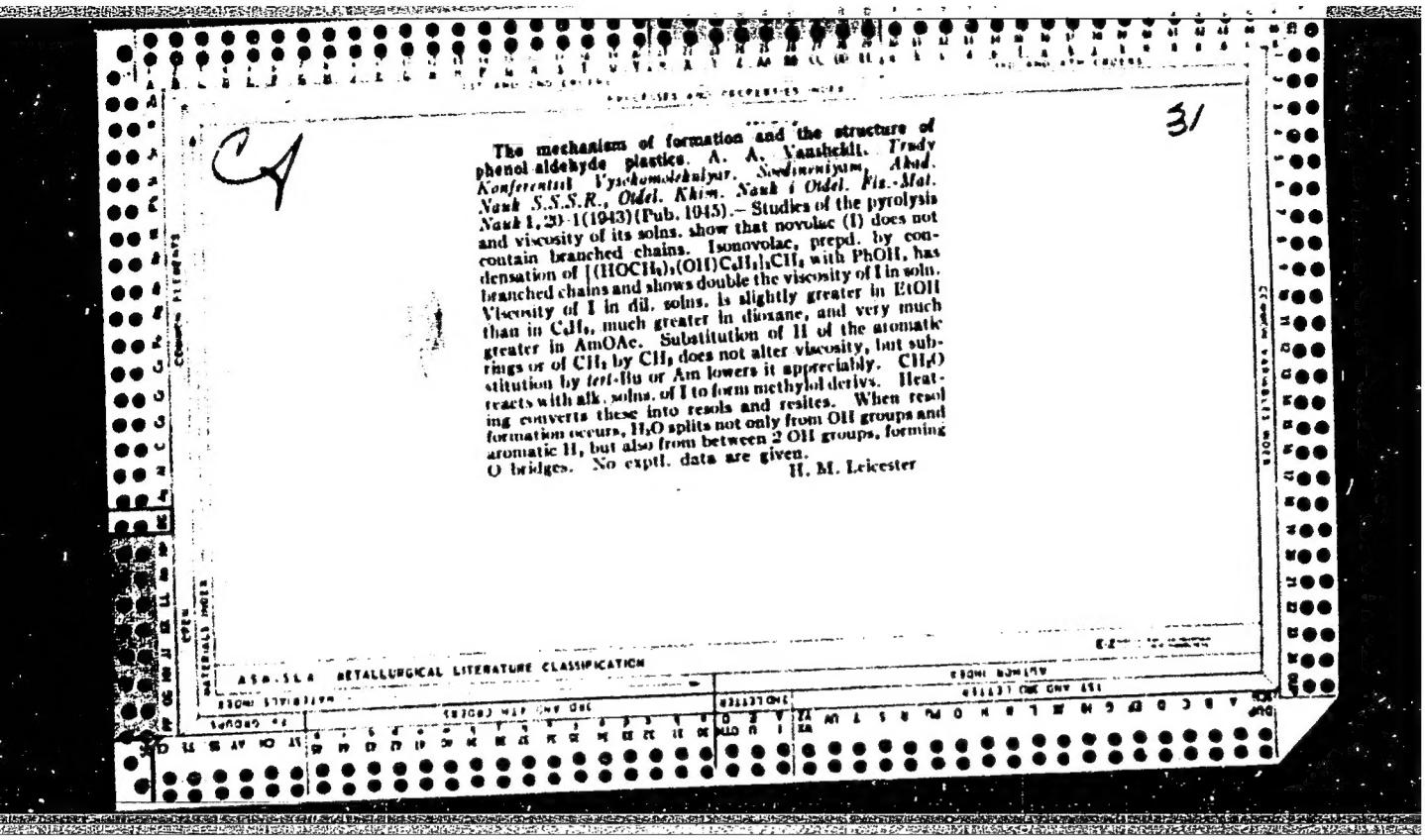


C4

31

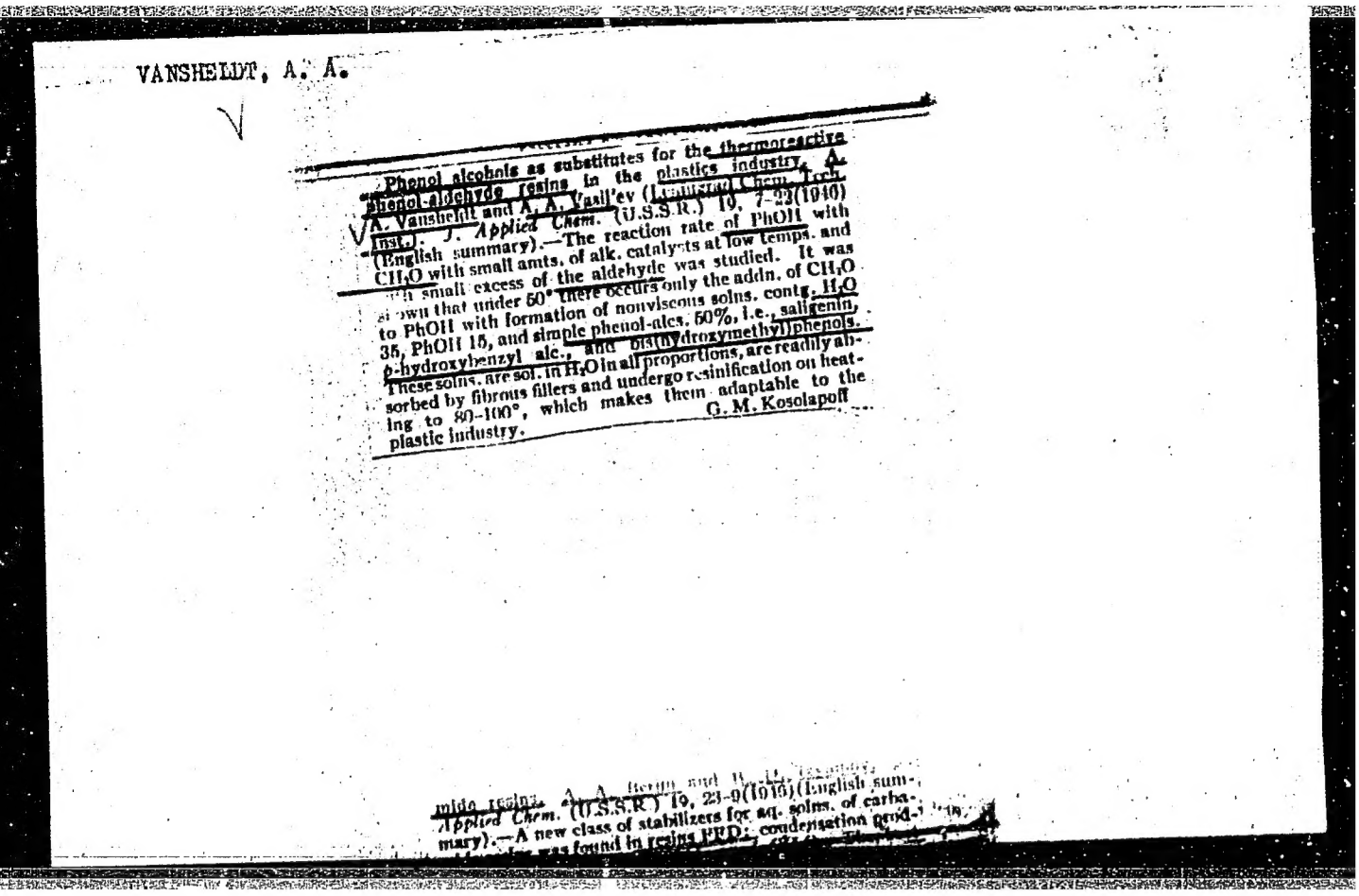
The mechanism of formation and the structure of phenol aldehyde plastics. A. A. Vanshtein. *Trudy Konferentsii Vysokomolekulyar. Soedinenii, Akad. Nauk S.S.S.R., Otdel. Khim. Nauk i Otdel. Fiz.-Mat. Nauk* 1, 29–41(1943)(Pub. 1945).—Studies of the pyrolysis and viscosity of its solns. show that novolac (I) does not contain branched chains. Isonovolac, prepd. by condensation of $[(HOC_6H_3)_2(OH)C_6H_2]_2CH_2$ with PhOH, has branched chains and shows double the viscosity of I in soln. Viscosity of I in dil. solns. is slightly greater in EtOH than in C_6H_6, much greater in dioxane, and very much greater in AmOAc. Substitution of H of the aromatic rings or of CH_2 by CH_3 does not alter viscosity, but substitution by *tert*-Bu or Am lowers it appreciably. CH_2O reacts with alk. solns. of I to form methylol derivs. Heating converts these into resols and resites. When resol formation occurs, H_2O splits not only from OH groups and aromatic H, but also from between 2 OH groups, forming O bridges. No exptl. data are given.

H. M. Leicester

VANSHEIDT, A. A.

"Investigations in the field of High Molecular Weight Polymers. I. On Methylene-Malonic Ester and its Polymers." Vansheidt, A. A., Itenberg, A. M. and Pazi, M. N. (p. 574)

SO: Journal of General Chemistry (Zhurnal Obshchei Khimii) 1945, Volume 15, no. 6.

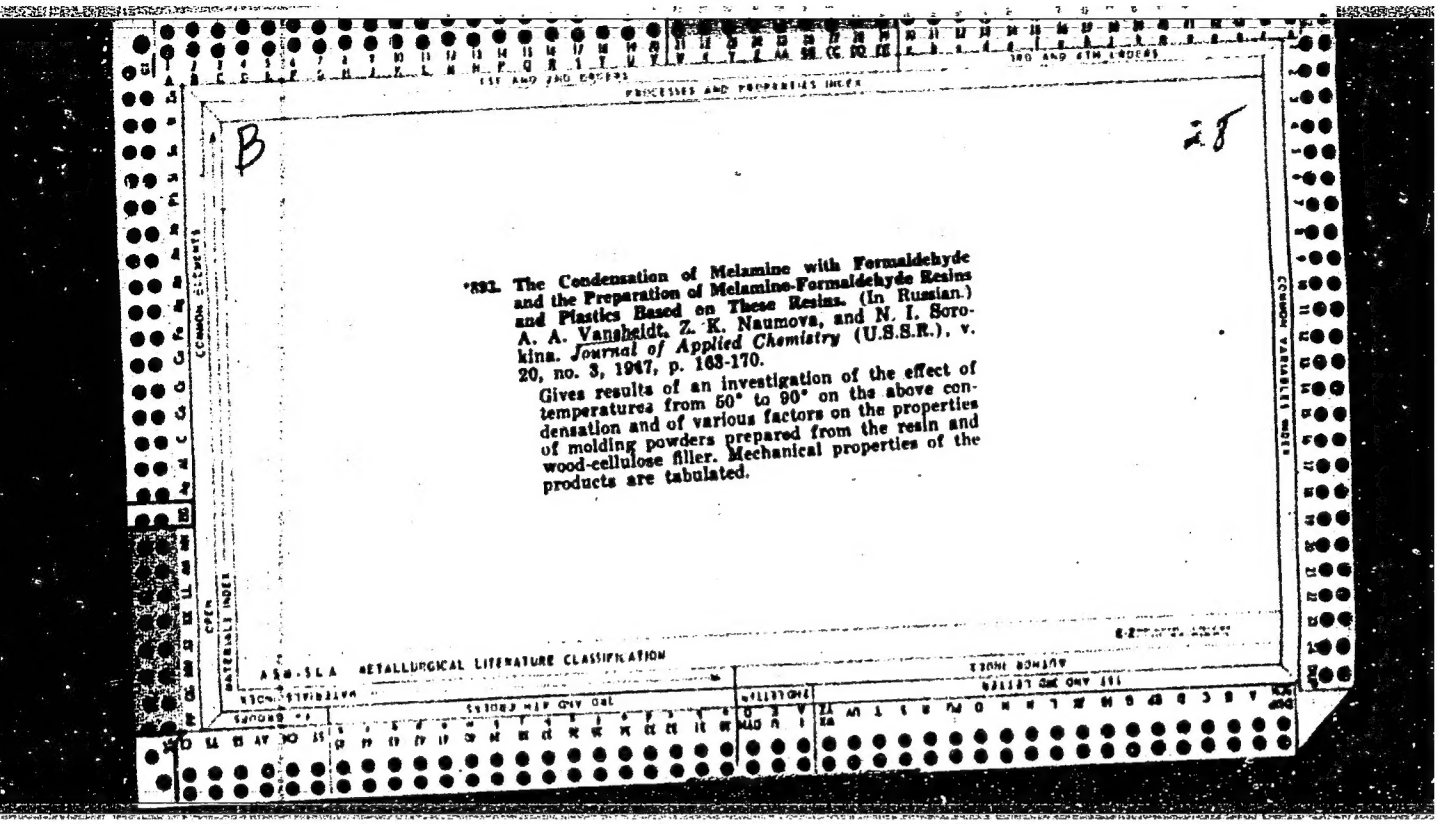


VANSHELDT, A. A.

Phenol alcohols as substitutes for the thermoreactive phenol-aldehyde resins in the plastics industry. A. A. Vansheldt and A. A. Vasil'ev (Leningrad Chem. Tech. Inst.). *J. Applied Chem.* (U.S.S.R.) 19, 7-23(1946) (English summary).—The reaction rate of PhOH with CH_2O with small amts. of alk. catalysts at low temps. and with small excess of the aldehyde was studied. It was shown that under 50° there occurs only the addn. of CH_2O to PhOH with formation of nonviscous solns. contg. H_2O 35, PhOH 15, and simple phenol-ales. 50%, i.e., saligenin, p-hydroxybenzyl ale., and bis(hydroxymethyl)phenols. These solns. are sol. in H_2O in all proportions, are readily absorbed by fibrous fillers and undergo resinification on heating to 80-100°, which makes them adaptable to the plastic industry.

G. M. Kosolapoff

...mide resins. A. A. Berlin and ... (Leningrad ...). *J. Applied Chem.* (U.S.S.R.) 19, 23-9(1946) (English summary).—A new class of stabilizers for aq. solns. of carba... was found in resins FFD; condensation prod...



B

28

*891. The Condensation of Melamine with Formaldehyde and the Preparation of Melamine-Formaldehyde Resins and Plastics Based on These Resins. (In Russian.) A. A. Vansheidt, Z. K. Naumova, and N. I. Sorokina. *Journal of Applied Chemistry* (U.S.S.R.), v. 20, no. 3, 1947, p. 163-170.

Gives results of an investigation of the effect of temperatures from 50° to 90° on the above condensation and of various factors on the properties of molding powders prepared from the resin and wood-cellulose filler. Mechanical properties of the products are tabulated.

VANSHEYDT, A. A.

PA 11/49T22

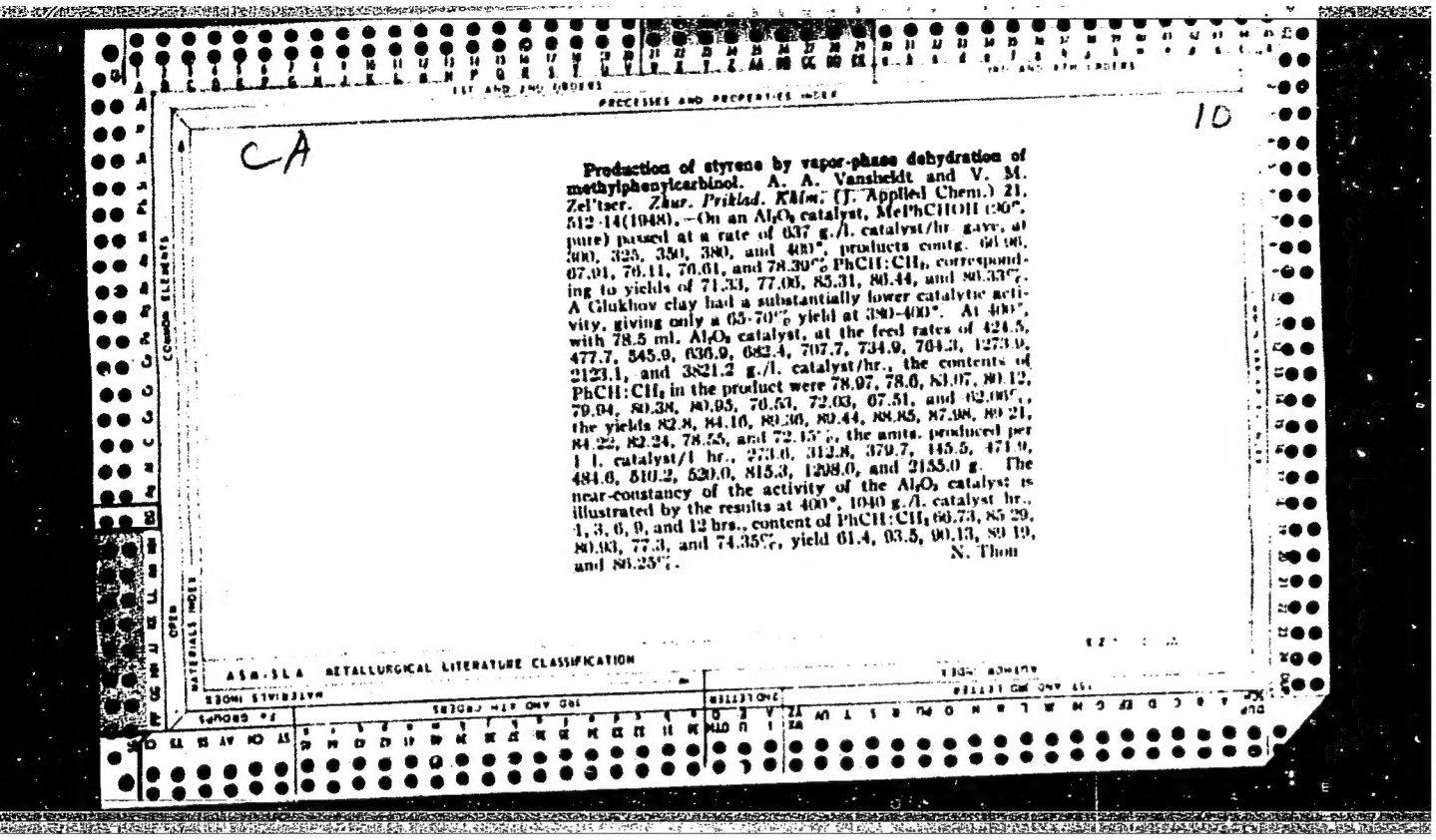
USSR/Chemistry - Alcohols, Phenolic May 48
Chemistry - Paraform

"The Derivation of Phenolalcohol From Phenol and Paraform," A. A. Vansheydt, R. I. Gruz, Chair of Plastics, Leningrad Tech Inst imeni Lensovet, 10 pp

"Zhur Priklad Khimii" Vol XXI, No 5

When phenol is heated with paraform at 50 - 70° in presence of 0.5 - 1% caustic soda, paraform dissolves and phenol is fixed by formaldehyde, with formation of viscous products, distinguished by unlimited solubility in water. Shows that these products are simple phenolalcohols. They can be set by heat or by strong acid.

11/49T22



CA

10

Production of styrene by vapor-phase dehydration of methylphenylcarbinol. A. A. Vansheidt and V. M. Zel'tser. *Zhur. Priklad. Khim.* (J. Applied Chem.) 21, 512-14(1948).—On an Al_2O_3 catalyst, MePhCHOH (96% pure) passed at a rate of 637 g./l. catalyst/hr. gave, at 300, 325, 350, 380, and 400°, products contg. 66.06, 67.01, 70.11, 70.61, and 78.39% PhCH:CH_2, corresponding to yields of 71.33, 77.00, 85.31, 86.44, and 80.53%. A Glukhov clay had a substantially lower catalytic activity, giving only a 65-70% yield at 390-400°. At 400°, with 78.5 ml. Al_2O_3 catalyst, at the feed rates of 424.5, 477.7, 545.9, 636.9, 682.4, 707.7, 734.9, 764.3, 1273.9, 2123.1, and 3821.2 g./l. catalyst/hr., the contents of PhCH:CH_2 in the product were 78.97, 78.6, 83.07, 80.12, 79.94, 80.38, 80.95, 70.53, 72.03, 67.51, and 62.08%, the yields 82.8, 84.16, 89.36, 89.44, 88.85, 87.98, 89.21, 84.22, 82.24, 78.55, and 72.15%, the amts. produced per 1 l. catalyst/1 hr., 273.0, 312.8, 379.7, 445.5, 471.9, 484.6, 510.2, 520.0, 815.3, 1208.0, and 2155.0 g. The near-constancy of the activity of the Al_2O_3 catalyst is illustrated by the results at 400°, 1040 g./l. catalyst hr., 1, 3, 6, 9, and 12 hrs., content of PhCH:CH_2 60.73, 85.29, 80.93, 77.3, and 74.35%, yield 61.4, 93.5, 90.13, 89.19, and 80.25%.

N. Thon

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

5(3) SOV/80-32-5-37/52

AUTHORS: Vansheydt, A.A., Kuznetsova, N.N., Kulikova, Z.I.

TITLE: On the Simultaneous Polycondensation of Phenoxyacetic Acid and n-Chlorophenol With Formaldehyde

PERIODICAL: Zhurnal prikladnoy khimii, 1959, Vol 32, Nr 5, pp 1142-1149 (USSR)

ABSTRACT: Ion exchange resins with a decreased content of carboxyl groups have been synthesized by simultaneous polycondensation of phenoxyacetic acid (POA) and formaldehyde with phenol and resorcin to attain a higher selectivity for large organic ions. The condensation takes place as a violent interaction of the mentioned substances. The less reactive n-chlorophenol was therefore used. The melting point of the soluble resins varies between 95 and 110°C, the molecular weight which has been determined by cryoscopy, from 620 to 710. It has been established that at a molar ratio CH_2O : POA = 0.8 the mean degree of polymerization is equal to 4. The soluble resins can be regarded as mixtures of polymer-homologs, the molecules of which consist on the average of 5 POA residues and chlorophenol. Hardening is effected by heating with paraform in the presence of 4% sulfuric acid to 120 - 140°C for 6 - 7 hours. The resins have a high exchange capacity for large organic ions. With a de-

Card 1/2

On the Simultaneous Polycondensation of Phenoxyacetic Acid and n-Chlorophenol With Formaldehyde

crease of the introduced paraform the coefficient of swelling increases from 2.5 to 14, but their yield and mechanical resistance decrease. The content of chlorine and OH-groups in the insoluble polymers shows that the initial polymer is not homogeneous. The three-dimensional polymer is formed from the linear polymer by the growth of the polymer which is then converted to the three-dimensional form when the degree of polymerization reaches 6 - 7, which corresponds to the presence of 7 - 8 aromatic links in the chains.
There are 4 tables and 3 references, 2 of which are Soviet and 1 English.

SUBMITTED: November 3, 1958

VANSHEYDT, A. A.

PA 10/49T27

USSR/Chemistry - Resinous Products, Aminoplasts
Chemistry - Formaldehyde

Jun 48

"Action of Water on Aminoplasts," A. A. Vansheydt, Z. K. Naumoza, Leningrad Sci Res Inst of Plastics, 11 pp

"Zhur Priklad Khimii" Vol XXI, No 6 - p. 644-54

When aminoplast products are treated with hot water, formaldehyde is obtained, quantity depending on conditions of pressing. Formaldehyde also produced, although in considerably smaller quantity, when methenecarbamide is heated in water. Phenomena can

10/49T27

USSR/Chemistry - Resinous Products, Aminoplasts (Contd)

Jun 48

be explained by detachment of formaldehyde from methene groups in resin molecules and by fact that aminoplasts undergo slow hydrolysis when heated with water. Submitted 17 May 47.

10/49T27

VANSHEYDT, A. A.,

USSR/Chemistry - Plastics and Polymerization — Dec 50

"Polymerization of Vinylformiate," A. A. Vansheydt, L. F. Chelpanova, Chair of Plastics, Leningrad Technol Inst imeni Lensovet

"Zhur Obshch Khim" Vol XX, No 12, pp 2261-2273

Polymerized vinylformiate under different conditions. In presence of air or aldehyde admixture alone insignificant amounts of low viscosity polymers result, even on prolonged heating. In presence of both polymerization occurs at ordinary temperatures due to formation of aldehyde peroxide.

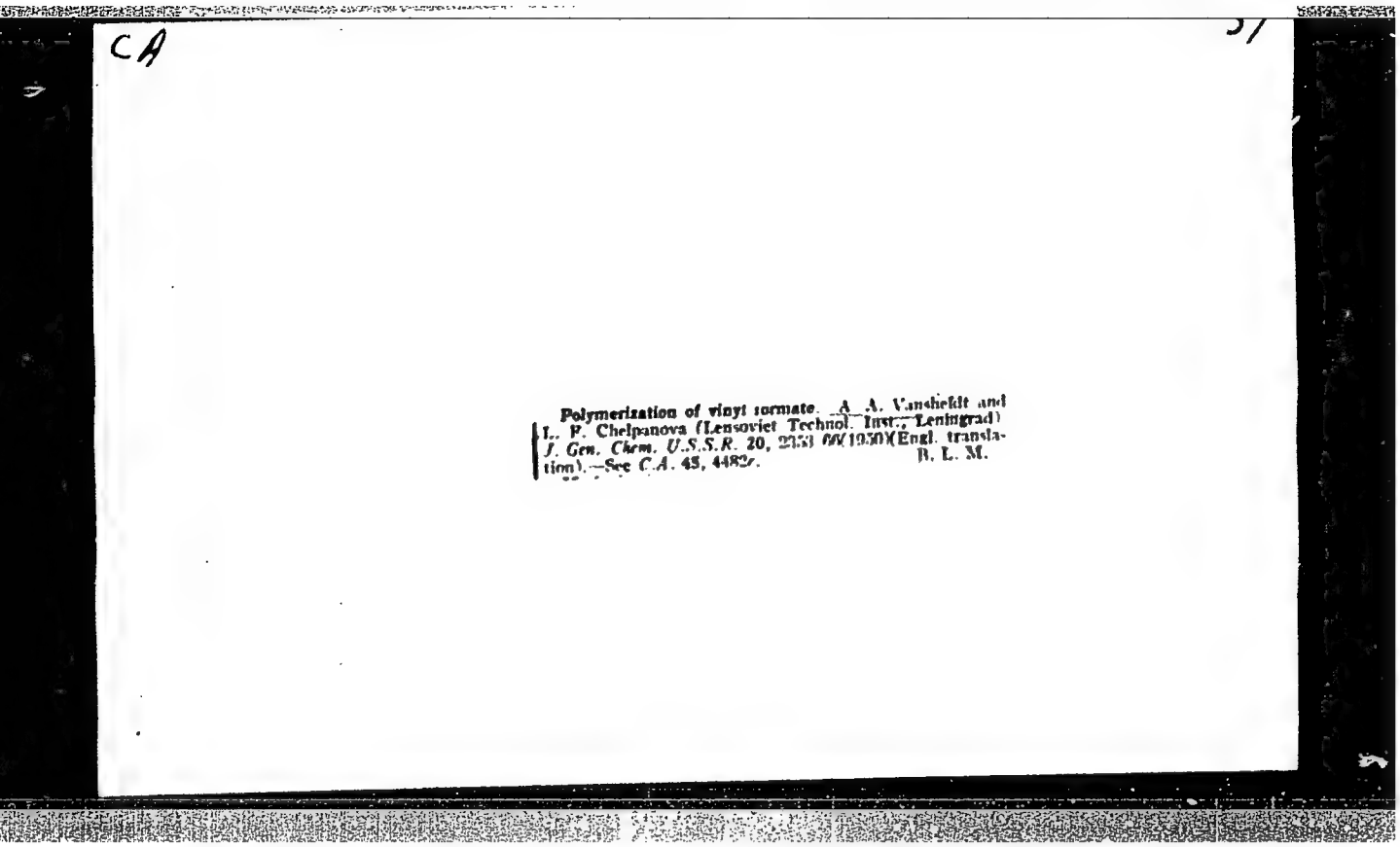
[redacted] 17OT31

USSR/Chemistry - Plastics and Polymerization (Contd) — Dec 50

Benzoyl peroxide is effective in inducing polymerization. Viscosity lowered in presence of acetone due to transmission of chain reaction mechanism by it. In presence of p-brombenzoyl or chloracetyl peroxide halogen-containing polymers are formed, because decomposition products of these 2 peroxides initiate polymerization and are chemically bound with resulting polymers. In absence of solvents and air, pure vinylformiate yields glass-like polymer in which insoluble, granular, 3-dimensional polymer grows.

[redacted] 17OT31

PA 170T31



CA

Polymerization of vinyl formate. A. A. Vanshelkt and L. P. Chelpanova (Lensoviet Technol. Inst., Leningrad). *J. Gen. Chem. U.S.S.R.* 20, 2153 (1950)(Engl. translation).—See *C.A.* 45, 4482*e*. B. L. M.

VANSHEYDT, A.A.; GRUZ, R.I.

Influence of free radicals of the triphenylmethyl type on styrene polymerization. Khim. i Fiz. Khim. Vysokomolekul. Soedineniy, Doklady 7-oy Konf. Vysokomolekul. Soedineniyam '52, 80-2. (MLRA 5:7) (CA 47 no.15:7819 '53)

1. Lensovet Technol. Inst., Leningrad.

USSR/Chemistry - Plastics and synthetic resins FD-959

Card 1/1 Pub. 50 - 2/19

Authors : Prof Vansheydt, A. A., Dr Chem Sci; Kuznetsova, N. N.

Title : Contemporary ideas in regard to the structure of phenol-formaldehyde resins

Periodical : Khim. prom., No 7, 387-94 (3-10), Oct-Nov 1954

Abstract : Review recent work on the subject on the basis of USSR and foreign publications. Forty eight references; 20 USSR, 9 since 1940.

VANSHEYDT, A. A.
USSR/Chemistry

Card 1/1

Authors : Dinaburg, V. A; and Vansheydt, A. A.

Title : Mercaptans and disulfides as agents of the rearrangement of bonds during thermal polymerization of styrene

Periodical : Zhur. Ob. Khim. 24, Ed. 5, 840 - 848, May 1954

Abstract : The authors investigated the thermal polymerization of styrene at 99° in the presence of mercaptans and disulfides belonging to fatty, aromatic and heterocyclic compounds. They determined the molecular weights of polymers and obtained quantitative data on the rate of disappearance of highly active mercaptans during polymerization. A calculation of constants, regarding the rearrangement of bonds, showed that both mercaptans and disulfides are capable of changing bonds and that the structure of the radicals strongly affects the degree of activity of these or other agents. Diisopropyl xanthogen disulfide was found to be the most active agent among all other investigated disulfides. Fifteen references. Tables.

Institution: The Technological Institute, Leningrad, USSR

Submitted : October 9, 1953

Vansheydt, A. A.

U/L-1

JPRS: L-974-N
CSO: 1743-N

THEORY AND PRACTICE OF THE APPLICATION OF ION-EXCHANGE MATERIALS

Teoriya i Praktika Primeneniya Ionoobmennykh Materialov, Moscow, 1955, pp 1-164.

K. V. Chmutov

TABLE OF CONTENTS

VANSHEYDT, A.A.

Category: USSR / Physical Chemistry - Surface phenomena. Adsorption. Chromatography. Ion exchange. B-13

Abs Jour: Referat Zhur-Khimiya, No 9, 1957, 30218

Author : Samsonov G. V., Bresler S. Ye., Vansheydt A. A., Kuznetsova N. N., Lavrent'yeva S. F., Shesterikova M. P.

Inst : not given
Title : Sorption of Streptomycin by Carboxyphenol Resins

Orig Pub: Antibiotiki, 1956, 1, No 5, 42-46

Abstract: Trivalent cathions of streptomycin (Str^{3+}) are sorbed irreversibly at sulfocathionites while with purely carboxylic cathionites (KFU and KMT) absorption capacity for Str^{3+} amounts to only 38-22% of their capacity for simple inorganic cathions (Na^{+} and Ca^{2+}), evidently due to steric hindrances caused by excessively close distribution of carboxyl groups. It was found, in accord with the theoretical assumption, that the readily swelling, capable of ion-exchange

Card : 1/2 -25-

Category: USSR / Physical Chemistry - Surface phenomena. Adsorption. Chromatography. Ion exchange

B-13

Abs Jour: Referat Zhur-Khimiya, No 9, 1957, 30218

throughout their bulk, resins of the mixed carboxy-phenol type (KRFFU, KRFU, Czechoslovak ROA resin), of strongly reduced general exchange capacity (phenolic OH groups do not participate in the exchange), exhibit considerably greater relative adsorption capacity for Str^{2+}. It is shown that the constant of $Str^{2+} - Na^{+}$ exchange at carboxy-phenolic resins differs little from the constants at purely carboxylic resins.

Card : 2/2

VAISHTEYDT, A. A., and ANDREYEVA, Y. Y.

"Replica polymerization of methylmethacrylate," a paper presented at the 9th Congress on the Chemistry and Physics of High Polymers, 28 Jan-2 Feb 57, Moscow, Leningrad Polytechnic Inst.

B-3,084,395

VANSHEYDT, A. A., and OURS, R. Y.

"Improvement of the light resistance of polyvinylchloride," a paper presented at the 9th Congress on the Chemistry and Physics of High Polymers, 28 Jan-2 Feb 57, Moscow, Polytechnic Inst., Leningrad.

B-3,084,395

Vansheydt, A.A.

VANSHEYDT, A.A.; KUZNETSOVA, N.N.

Investigating the mechanism of "hardening" of phenolformaldehyde resols. Zhur.prikl.khim. 30 no.12:1850-1858 D '57. (MIRA 11:1)

1.Institut vysokomolekulyarnykh soyedineniy AN SSSR.
(Phenol condensation products)

VANSHEYDT, A.A.; MEL'NIKOVA, Ye.P.; KUKHAREVA, L.V.; KRAKOVYAK, M.G.

Method for the synthesis of dichloromethyl derivatives of naphthalene and diphenyl oxide. Khim. nauka i prom. 3 no.2: 287 '58. (MIRA 11:6)

1. Institut vysokomolekulyarnykh soyedineniy AN SSSR.
(Naphthalene) (Phenyl ether)

SOV/63-3-6-35/43

AUTHORS: Usmanova, N.F., Golubeva, A.V., Vansheydt, A.A.

TITLE: The Synthesis of Paraisopropylstyrene and the Properties of Its Polymers and Copolymers With Styrene (O sinteze paraizopropilstirola i svoystvakh yego polimerov i sopolimerov so stirolom)

PERIODICAL: Khimicheskaya nauka i promyshlennost', 1958, Vol III, Nr 6, pp 833-834 (USSR)

ABSTRACT: Simultaneous polymerization of styrene with paraisopropylstyrene was used for the production of polystyrenes with various contents of paraisopropyl groups in the aromatic nuclei. Polymers of isopropylstyrene were produced by the block and emulsion methods. Copolymerization of paraisopropylstyrene with styrene was carried out by the block method using 5 different relations of the monomers in the initial mixtures. The properties of the produced polymers and copolymers are shown in a table.
There is 1 table and 5 references, 1 of which is Soviet, 3 English, and 1 German.

Card 1/2

SOV/63-3-6-35/43

The Synthesis of Paraisopropylstyrene and the Properties of Its Polymers and Copolymers With Styrene

ASSOCIATION: Nauchno-issledovatel'skiy institut polimerizatsionnykh plastmass (Scientific Research Institute of Polymer Plastics)

SUBMITTED: April 7, 1958

Card 2/2

VASIL'YEV, A.A.; VANSHEYDT, A.A.

Sulfonic acid ion-exchanging resins composed mainly of phenol-formaldehyde lacquer resins and formaldehyde. Zhur. prikl. khim. 31 no.7:1075-1080 Jl '58. (MIRA 11:9)

1. Institut vysokomolekulyarnykh soyedineniy AN SSSR.
(Formaldehyde) (Phenol) (Ion exchange)

VASIL'YEV, A.A.; VANSHEYDT, A.A.

Synthesis of cationites by means of high temperature sulfonation of formaldehyde lacquer resins. Zhur. prikl. khim. 31 no.8:1273-1275 Ag '58. (MIRA 11:10)

1. Institut vysokomolekulyarnykh soyedineniy AN SSSR.
(Gums and resins) (Sulfonation)

VASIL'YEV, A.A.; VANSHEYDT, A.A.

Preparation of sulfo-lacquer ion exchanging resins with increased exchange capacity. Zhur. prikl. khim. 31 no.9:1436-1437 S '58. (MIRA 11:10)

1. Institut vysokomolekulyarnykh soyedineniy AN SSSR.
(Ion exchange) (Gums and resins)

VASIL'YEV, A.A.; VANSHEYDT, A.A.

Chemical nature of sulfonovolak and ion-exchanging resins.
Zhur. prikl. khim. 31 no.10:1527-1534 O '58. (MIRA 12:1)

1.Institut vysokomolekulyarnykh soyedineniy AN SSSR.
(Base-exchanging compounds)

VASIL'YEV, A.A.; VANSHEYDT, A.A.

Sulfonic acid ion-exchanging resins from polystyrene and formaldehyde.
Zhur.prikl.khim. 31 no.11:1692-1697 N '58. (MIRA 12:2)

1. Institut vysokomolekulyarnykh soyedineniy AN SSSR.
(Styrene) (Formaldehyde)
(Base-exchanging compounds)

VANSHEYDT, A.A.; MEL'NIKOVA, Ye.P.; KUKHAREVA, L.V.; KRAKOVYAK, M.G.

Soluble poly-n-xylylene. Zhur.prikl.khim. 31 no.12:1898-1900 D '58. (MIRA 12:2)

1. Institut vysokomolekulyarnykh soyedineniy AN SSSR.
(Quinodimethan) (Polymers)

76-32-3-4/43

AUTHORS: Shtraykhman, G. A., Vansheydt, A. A., Petrova, G. A.

TITLE: Investigations on the Effect of the Structure of Unsaturated Compounds on Their Reactivity in Copolymerization Processes (Issledovaniye vliyaniya struktury nenasyshchennykh soyedineniy na ikh reaktsionnosposobnost' v protsessakh sopolimerizatsii). I. The Determination of the Constant of Relative Activity of Monomers for the General Case of Copolymerization (I. Opredeleniye konstant otnositel'noy aktivnosti monomerov dlya obshchego sluchaya sopolimerizatsii)

PERIODICAL: Zhurnal Fizicheskoy Khimii, 1958, Vol 32, Nr 3, pp 512-519 (USSR)

ABSTRACT: Presently 5 methods for the determination of the constant of the relative activity of monomers, the so-called "copolymerization constant", exist: those, according to Alfrey et al. (Ref 3), according to Mayo and Lewis (Ref 1), according to Fineman and Ross (Ref 5), according to S. S. Medvedev and A. D. Abkin (Ref 6) and according to Joshi and Kapur (Ref 7). All methods, except the last-mentioned, are of graphical type and depend on subjectivity in determining the constant, whilst that one (last-mentioned) is objective. However, it only

Card 1/3

Investigations on the Effect of the Structure of Unsaturated Compounds on Their Reactivity in Copolymerization Processes. I. The Determination of the Constant of Relative Activity of Monomers for the General Case of Copolymerization

can be employed for experiments at small conversion depth. The present work describes an analytical method for determining the copolymerization constants r_1 and r_2 based on the application of the integral form of the composition equation, as a further development of the method according to Mayo and Lewis. The differential form of the equation of composition of the copolymers was determined beside Mayo and Lewis, independently by Alfrey and Goldfinger (Ref 8), as well as by Wall (Ref 9). The present method has some advantages, compared with that last-mentioned, if a sharply marked difference exists between the composition of the copolymer and that of reaction mixture. Accordingly, as in the method of Mayo and Lewis the deviation from the linear form (even a small one) of the experimental lines is not taken into consideration, the described method introduces a mean value (parameter p), which is considered as constant in the system to be investigated. The parameter p is determined by a test series and is applied in the computations of r_1 and r_2, whereby the shape of the curve of the function $r_2 = f(r_1)$ is considered.

Investigations on the Effect of the Structure of Unsaturated Compounds on Their Reactivity in Copolymerization Processes. I. The Determination of the Constant of Relative Activity of Monomers for the General Case of Copolymerization

Also a graphical variant of the method is possible, whereat diagrams r_2 - p are drawn, and a mean value for p is taken from the intersections of the curves and is applied in the further calculations. This method was applied in calculating the copolymerization constants in the system methyl metacrylate - methacrylamine, whereat a value of $p_{op} = -1.279$ (p=const) and $r_1 = 1.65 \pm 0.05$ and $r_2 = 0.49 \pm 0.02$ (at 70°C) is given. This is in agreement with data of Crauwels and Smets (Ref 11). Data on the experimental procedure are given, whereat among others, it is to be seen that the experiments were performed with (0.1 weight %) benzoyl peroxide, at 70°C. There are 1 figure, 4 tables, and 12 references, 4 of which are Soviet.

ASSOCIATION: Akademiya nauk SSSR, Institut vysokomolekulyarnykh soyedineniy, Leningrad (AS USSR Leningrad Institute of High-molecular Compounds)

SUBMITTED: July 7, 1956

AUTHORS: Vasil'yev, A.A. and Vansheydt, A.A. SOV/80-59-1-24/44

TITLE: Sulfacid Ion-Exchange Resins Based on Polyvinylchloride and Other Vinyl Polymers (Sul'fokislotnyye ionoobmennyye smoly na osnove polivinilkhlorida i drugikh vinil'nykh polimerov)

PERIODICAL: Zhurnal prikladnoy khimii, 1959, Nr 1, pp 150-157 (USSR)

ABSTRACT: The authors performed investigations which showed that the sulfonation of many aliphatic polyvinyl compounds with the oleum or chlorosulfonic acid led to the formation of three-dimensional polymers insoluble in organic solvents, water and aqueous solutions of alkalis, which contain a considerable quantity of sulfur in the form of sulfogroups. In the experimental part of these investigations took part also V.S. Matrosova and T.V. Gerasimyuk. An initial material in one series of experiments were the samples of powdered polyvinylchloride of various grades and the crushed pellicular vinyl plastics. The sulfonation was brought about by the 8 to 20% oleum and 92% chlorosulfonic acid, which resulted in the production of sulfocationites (cationites SKhV). In the other series of experiments polyvinylacetate was used as an initial material for sulfonation and the reaction resulted in the formation of insoluble

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Sulfacid Ion-Exchange Resins Based on Polyvinylchloride and Other Vinyl Polymers

sulforesin. On the basis of these and other experiments the possibility was established to synthesize ion-exchange resins by sulfonation of various vinyl polymers: polyvinylchloride, polyvinylacetate, copolymers of vinylchloride with various unsaturated compounds, polyethylene, and polyvinyl alcohol. The sulfocationites based on the polyvinylchloride (SKhV cationites) are characterized by the exchange capacity of 2 to 4 mg-equiv./g with the swelling coefficient of 1.1 to 1.5 and by the good resistance to alkalis and nitric acid. The characteristics of cationites based on the other vinyl polymers, with an exception of the polyvinyl alcohol, are close to those of the SKhV cationites.
There are 9 tables and 8 references, 3 of which are Soviet, 2 English, 1 Japanese and 2 German.

SOV/80-59-1-24/44

Sulfacid Ion-Exchange Resins Based on Polyvinylchloride and Other Vinyl Polymers

ASSOCIATION: Institut vysokomolekulyarnykh soyedineniy AN USSR (Institute of High-Molecular Compounds of the AS USSR)

SUBMITTED: April 8, 1959

Card 3/3

5(3) SOV-60-32-4-29/47

AUTHORS: Vansheydt, A.A. and Kuznetsova, N.N.

TITLE: On the Polycondensation of Phenoxyacetic Acid With Formaldehyde and the Synthesis of a Weakly Acid Ionite Based on Them (O polikondensatsii fenoksiuksusnoy kisloty s formal'degidom i sinteze slabokislotnogo ionita na ikh osnove)

PERIODICAL: Zhurnal prikladnoy khimii, 1959, Vol 32, Nr 4, pp 868-873 (USSR)

ABSTRACT: On the basis of some theoretical considerations, substantiated by analogies with phenolformaldehyde lacquer resins, the authors studied the reaction of polycondensation of phenoxyacetic acid with formaldehyde in the presence of mineral acids with an aim to produce resins with a higher resistance to alkalis and oxidizers. It has been found that this reaction takes place at a high rate when the solution of phenoxyacetic acid in the formalin is heated in the presence of hydrochloric acid. The reaction leads to the formation of fusible polymers, soluble in alkali hydroxide, with a molecular weight of 570 to 970, if the molar ratio of phenoxyacetic acid to formaldehyde is equal or more than unity. The analysis of the soluble resins shows that they, like lacquer resins, are mixtures

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On the Polycondensation of Phenoxyacetic Acid With Formaldehyde and the Synthesis of a Weakly Acid Ionite Based on Them

of polymers of the type $H[C_6H_3(OR)CH_2]_nC_6H_4OR$ (where $R = -CH_2COOH$), in which from 3 to 6 molecules of the phenoxyacid are interbonded by methylene bonds. When soluble resins are heated with the paraform in the presence of sulfuric acid, three-dimensional polymers are formed which are infusible and insoluble, but swelling in alkali hydroxide, and possess the properties of weakly acid ionites with an exchange capacitance equal to 5.8 mg-equ/g. They are distinguished by a capacity of selective sorption of streptomycin out of a cultural liquid.
There are 2 tables and 4 references, 2 of which are Soviet, 1 American and 1 German.

SUBMITTED: April 14, 1958

5 (4)

AUTHORS: Petrova, G. A., Shtraykhman, G. A., Vansheydt, A. A. SOV/76-33-6-12/44

TITLE: Investigation of the Influence of the Structure of Unsaturated Compounds Upon Their Reactivity in Co-polymerization Processes (Issledovaniye vliyaniya struktury nenasyshchennykh soyedineniy na ikh reaktsionnosposobnost' v protsessakh sopolimerizatsii). II. Influence of Various Substituents at the Nitrogen Upon the Reactivity of the Derivatives of Methacrylamide With Respect to a General Type of Radical (II. Vliyaniye razlichnykh zamestiteley pri azote na reaktsionnosposobnost' proizvodnykh metakrilamida po otnosheniyu k obshchemu tipu radikala)

PERIODICAL: Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 6, pp 1246-1252 (USSR)

ABSTRACT: An investigation was made of the co-polymerization (C) of methylmethacrylate (I) with methyl-, ethyl-, phenyl-, n-tolyl-, n-anisyl methacrylamide (II) as well as methacrylyl glycine ester and the dimethyl ester of methacrylyl imino acetic acid. The two last mentioned compounds were synthesized for the first time. On the strength of the co-polymerization constant.. (CC)

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(r_1 and r_2) obtained, the authors determined the relative activities of the monomers, which characterize the influence of the various substituents on reactivity (with respect to the general radical of (I)) (Table 3). A computation was made of the values of the specific acitivity Q and polarity e (Table 4) of the monomers; by the aid of these values the position of the monomers is determined in the coordinate system Q - e. The (C) occurred at 70° in sealed glass ampules under the addition of 0.1 % benzoyl peroxide. The results of (C) are shown (Table 1) as well as the properties of the monomers and the (CC) obtained (Table 2). The aromatic derivatives of methacrylamide are found to exhibit a higher activity than the aliphatic derivatives; thus, for example, the activity of (II) is almost 12 times higher than that of the non-substituted amide. The position of the monomers in the series of relative activities agrees with present conceptions concerning the influence of the substituents in

Investigation of the Influence of the Structure of Unsaturated Compounds Upon Their Reactivity in Co-polymerization Processes. II. Influence of Various Substituents at the Nitrogen Upon the Reactivity of the Derivatives of Methacrylamide With Respect to a General Type of Radical

SOV/76-33-6-12/44

the case of double bonds on the degree of bond and polarity; the same applies to the experimentally determined values of Q and e. Pertinent explanations as well as data concerning the influence of some substituents on the activity of the monomers (Table 5) are supplied. There are 5 tables and 12 references, 4 of which are Soviet.

ASSOCIATION: Akademiya nauk SSSR, Institut vysokomolekulyarnykh soyedineniy Leningrad (Academy of Sciences of the USSR, Institute of High-molecular Compounds, Leningrad)

SUBMITTED: October 26, 1957

Card 3/3

83480

S/190/60/002/009/011/019
B004/B060

5,3831 also 2109,2209

AUTHORS: Mel'nikova, Ye. P., Vansheydt, A. A., Krakovyak, M. G., Kukhareva, L. V.

TITLE: Application of the Würtz Reaction to the Synthesis of Polymers of the Polyxylylene Type. I. Interaction of Metallic Sodium With Bis-chloro-methyl Derivatives of Aromatic Hydrocarbons

PERIODICAL: Vysokomolekulyarnyye soyedineniya, 1960, Vol. 2, No. 9, pp. 1383-1390

TEXT: The authors discuss the production of polymers of the type $(-CH_2ArCH_2-)_n$ (Ar = aryl residue) by means of the pyrolysis of dimethyl-substituted aromatic hydrocarbons. This reaction does not succeed if, as happens with m-xylene, no quinone monomer can form, or the methyl groups in derivatives of diphenyl methane are bound to different aromatic rings. The Würtz reaction is recommended for the production of polymers in such a case. After a survey of publications concerning the application of the Würtz reaction to the synthesis of polymers (Refs. 4-11), the authors

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S/190/60/002/009/011/019
B004/B060

Application of the Würtz Reaction to the Synthesis of Polymers of the Polyxylylene Type. I. Interaction of Metallic Sodium With Bis-chloro-methyl Derivatives of Aromatic Hydrocarbons

describe the syntheses made by them. The initial products used were the substances listed in Table 1 with their melting points: p-bis-(chloro-methyl)-benzene; 2,5-bis-(chloro-methyl)-1,4-dimethyl benzene; 4,6-bis-(chloro-methyl)-1,3-dimethyl benzene; 4,4'-bis-(chloro-methyl)-diphenyl methane, and a difficultly separable mixture of bis-(chloro-methyl)-naphthalene (1,4 + 1,5). The reaction of the compounds with sodium metal took place in a nitrogen current in n-octane-, xylene-, and chiefly dioxane solution at temperatures kept near 20-25°C by cooling. Table 1 shows the analysis of the products obtained. They were: poly-p-dimethylene benzene; poly-2,5-dimethylene-1,4-dimethyl benzene; poly-4,6-dimethylene-1,3-dimethyl benzene; poly-4,4'-dimethylene-diphenyl methane; poly-4,4'-dimethylene diphenyl, and polydimethylene naphthalene (1,4 + 1,5). Although the reaction according to equation $nClCH_2ArCH_2Cl + 2(n-1)Na \rightarrow Cl(-CH_2-Ar-CH_2)_nCl + 2(n-1)NaCl$ made expect the formation of linear polymers with chlorine atoms at the ends, some of the polymers did not contain any chlorine. The

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Application of the Würtz Reaction to the Synthesis of Polymers of the Polyxylylene Type. I. Interaction of Metallic Sodium With Bis-chloro-methyl Derivatives of Aromatic Hydrocarbons

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B004/B060

authors doubt the possibility of a cyclization, and discuss the reactions that might cause a reduction of polymeric dichlorides. Reference is made to papers by Shorygin in this connection. The determination of the molecular weight on the basis of the chlorine content is not possible by the methods described. A variant of the synthesis from bis-(chloro-methyl)-m-xylene under elimination of the sodium excess led to the chlorine-containing product $Cl(C_{10}H_{12})_nCl$, whose molecular weight was found to be 4000, n = 30, while the same chlorine-free polymer obtained with sodium excess had a molecular weight of 1800, n = 14. The polydimethylene-m-xylene was readily soluble in chloroform, and its molecular weight was 1800 - 4000 depending on reaction conditions. The polymers of dimethylene benzene, p-xylene, and diphenyl methane with CH_2-groups in p-position were soluble in high-boiling solvents only. The determination of their molecular weight was not possible since the apparatus required was not available. The polymers from bis-chloro-methyl derivatives of diphenyl and naphthalene are spatially cross-linked products, insoluble in organic solvents.

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Application of the Würtz Reaction to the Synthesis of Polymers of the Polyxylylene Type. I. Interaction of Metallic Sodium With Bis-chloro-methyl Derivatives of Aromatic Hydrocarbons

S/190/60/002/009/011/019
B004/B060

There are 2 tables and 25 references: 3 Soviet, 9 US, 6 British, 6 German, 1 French, and 1 Swiss.

IX

ASSOCIATION: Institut vysokomolekulyarnykh soyedineniy AN SSSR (Institute of High-molecular Compounds of the AS USSR)

SUBMITTED: April 11, 1960

Card 4/4

S/190/60/002/009/014/019
B004/B060

AUTHORS: Skorokhodov, S. S., Vansheydt, A. A.

TITLE: Polyvinyl Amine and Its Derivatives. I. Synthesis of Polyvinyl Amine and Its Carboxy-methyl Derivatives From Polyvinyl Succinimide

PERIODICAL: Vysokomolekulyarnyye soyedineniya, 1960, Vol. 2, No. 9, pp. 1405-1408

TEXT: In the introduction, the authors refer to data found in publications (Refs. 1-7) concerning methods of synthesizing polyvinyl amine, and discuss the difficulties encountered when applying these methods. The initial substance indicated for this synthesis is poly-N-vinyl succinimide whose monomer is easily produced by several methods (Refs. 8-12), and whose polymerization has been studied thoroughly (Refs. 9, 13). In a previous paper (Ref. 14), the authors had already proposed the synthesis of polyvinyl amine by hydrolysis of polyvinyl succinimide. As this hydrolysis was only partly successful, they now reduced the molecular weight of polyvinyl succinimide. This was made possible by the addition of large amounts of benzoyl peroxide, increase in the polymerization temperature (80°C), and by the addition of

Polyvinyl Amine and Its Derivatives. I. Synthesis of Polyvinyl Amine and Its Carboxy-methyl Derivatives From Polyvinyl Succinimide

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fluorene. The resulting polyvinyl succinimide possessed, if dissolved in chloroform, a specific viscosity of 0.14, and was saponified within 30 h by means of 10 N NaOH. The liberated polyvinyl amine, which was insoluble in water, was separated from the aqueous solution, converted into the hydrochloride, and purified by reprecipitation. It contained 81-82% of the theoretical content of primary amino groups. By means of sodium monochloro acetate it was converted into the corresponding carboxy-methyl compound which reacted amphoterically (Fig.: curve of potentiometric titration). The ability of this compound to form complexes like the low-molecular complexons is still being studied. The difficulties consist in the insolubility of the polycomplex in nonalkaline media, as well as in the formation of insoluble salts (e.g. Ba^{2+}), and in the precipitation of metal hydroxides (e.g. in zinc) at high pH. There are 1 figure and 15 references: 3 Soviet, 5 US, 1 Belgian, 1 British, 1 French, 2 German, and 2 Swiss.

ASSOCIATION: Institut vysokomolekulyarnykh soyedineniy AN SSSR
(Institute of High-molecular Compounds of the AS USSR)

SUBMITTED: April 10, 1960

Card 2/2

86383

S/190/60/002/012/010/019
B017/B055

15.8114 2209

AUTHORS: Mel'nikova, Ye. P., Vansheydt, A. A., Krakovyak, M. G., Kukhareva, L. V.

TITLE: Application of the Wurtz Reaction in the Synthesis of Polyxylylene Type Polymers. II. Properties of the Polycondensation Products of Dichloromethylated Aromatic Hydrocarbons With Metallic Sodium

PERIODICAL: Vysokomolekulyarnyye soyedineniya, 1960, Vol. 2, No. 12, pp. 1817-1823

X

TEXT: The physical properties of polymers prepared by polycondensation of dichloro-methyl derivatives of aromatic hydrocarbons with metallic sodium were investigated. It was found that the polymers prepared from dichloromethyl m-xylene, linked by CH_2 groups in meta position, are easily fusible and soluble. Polydimethylene p-xylene, in which the CH_2 groups are in para position, is crystalline and has a higher melting point. It dissolves in α-bromo naphthalene only at temperatures above 230°C. Poly-4,4'-dimethylene

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86323

Application of the Wurtz Reaction in the Synthesis of Polyxylylene Type Polymers. II. Properties of the Polycondensation Products of Dichloromethylated Aromatic Hydrocarbons With Metallic Sodium

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B017/B055

diphenyl methane is less crystalline and dissolves at temperatures lower by 100°C than p-xylene derivatives. X-ray analysis of these polymers confirms their crystal structure. The radiograms were taken on a YPC-50 (URS-50) X-ray apparatus. They show that all the polymers prepared are more or less crystalline and that the turbidities appearing at fusion or during the cooling of solutions are caused by crystallization products. Insoluble threedimensional polymerizates formed from dichloro-methyl derivatives of diphenyl and naphthalene are high-melting crystalline compounds. They dissolve after boiling for 4 h in α-bromo naphthalene without sufferding a change in melting point. The differences in polymerizate properties are evidently closely linked with the different stabilities of their crystallites towards higher temperatures and hot solvents. There are 6 figures, 2 tables, and 6 references: 2 Soviet, 2 US, 1 British, and 1 German.

ASSOCIATION: Institut vysokomolekulyarnykh soyedineniy AN SSSR (Institute of High-molecular Compounds of the Academy of Sciences USSR)

SUBMITTED: May 20, 1960

Card 2/2

VANSHEYDT, A.A.; SKOROKHODOV, S.S.; YERSHOVA, S.G.; MIKHAYLOVA, N.V.

Chemical nature of "N-vinylacetamide" described by Bacskai and Halmos. Vysokom. soed. 3 no.2:320 F '60. (MIRA 14:5)
(Acetamide)

VANSHEYDT, A.A ; MEL'NIKOVA, Ye.P.; KUKHAREVA, L.V.

Synthesis of dichloromethyl derivatives of *p*- and *m*-xylenes. Zhur. prikl. khim. 33 no.9:2151-2152 S '60. (MIRA 13:10)
(Xylene)

USMANOVA, N.F.; GOLUBEVA, A.V.; MANSHEYDT, A.A.; YEREMINA, Ye.N.

Synthesis and properties of polymers and copolymers of α- and β-vinylnaphthalenes. Report 1: Synthesis of monovinylnaphthalenes. Plast.massy no.3:3-6 '61. (MIRA 14:3)
(Naphthalene)

21141

S/191/61/000/004/002/009
B110/B208

15.8104 2209, 1372

AUTHORS: Usmanova, N. F., Golubeva, A. V., Vansheydt, A. A., Sivograkova, K. A.

TITLE: Synthesis and properties of α- and β-vinyl naphthalenes. Report II. Polymers of vinyl naphthalenes and their copolymers with styrene

PERIODICAL: Plasticheskiye massy, no. 4, 1961, 6-8

TEXT: Polymerization of monovinyl naphthalenes, and the properties of polymers that are more resistant to heat than polystyrene are as yet little known. P. P. Shorygin, I. V. Shorygina, Yu. S. Zal'kind, and S. A. Zonis found that α-vinyl naphthalene forms transparent, brittle polymers softening at 100-110°C with a molecular weight of approximately 5000. The poly-α-vinyl naphthalene obtained by S. Loshaek was also brittle and low-molecular. The α-vinyl naphthalene copolymerized by M. M. Koton with styrene and acrylic esters had also a low mechanical strength. The copolymers of β-vinyl naphthalene with styrene, methyl methacrylate, and methyl acrylate, studied by C. C. Price et al., had molecular weights of 10000-40000. The

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Synthesis and properties of...

authors had previously shown (Ref. 9: N. F. Ustanova et al. Plast massy no. 3 (1961)) that α- and β-vinyl naphthalenes may be prepared separately in good yields and simply from naphthalene. α- and β-vinyl naphthalenes (99.6-99.8 %) were polymerized by the block (I) and emulsion methods (II). In the case of (I), polymerization was performed in the presence of 0.5 % benzoyl peroxide for 100 hr in vacuo at temperatures gradually increasing from 60 to 130°C up to 98 % conversion. The polymers obtained in a yield of 97 % were reprecipitated from methanol dissolved in benzene in order to remove the monomers. In the case of (II), polymerization was carried out in the presence of potassium persulfate and sodium oleate in an N_2 atmosphere. The polymer was coagulated with 1 % formic acid and separated in the form of powder with a yield of 97-99 %. The α- and β-polymers thus prepared softened at 160°C, then formed a solid, transparent mass, and dissolved completely in benzene, toluene, and dichloro-ethane. The α-polymer, above all, is brittler than polystyrene, owing to a greater rigidity of its chains. To increase the mechanical strength, styrene links are to be incorporated into the molecule by copolymerization. This was also accomplished by block and emulsion polymerizations at different ratios of the monomers (10-90 %). Intrinsic viscosity, average molecular

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Synthesis and properties of...

weight, softening point, specific impact strength, and dielectric properties (tan δ and ε at 10^6 cps and 20°C) were determined. ε had a constant value of 2.6, and tan δ increased with increasing naphthalene content from $2 \cdot 10^{-4}$ to $5 \cdot 10^{-4}$. Intrinsic viscosity and molecular weight of the copolymer of α-vinyl naphthalene (Figs. 1 and 2) decreased fivefold by substituting naphthalene links for 40 % of the benzene links. In the β-compound, the decrease takes place more slowly, as its copolymers are high-molecular. The molecular weight of β-vinyl naphthalene copolymers with 40 (I) to 80 % (II) naphthalene content was 108000 (I) - 96000 (II), while that of α-vinyl naphthalene copolymers was only 15000 (I) - 10000 (II). The mechanical strength of a β-copolymer with 40 % β-vinyl naphthalene is sufficient for practical application. The heat resistance of α- and β-copolymers linearly increases from 113 to 150°C on transition from polystyrene to polyvinyl naphthalene. The emulsion method is especially suited for the preparation of copolymers with 30 % β-vinyl naphthalene of optimum molecular weight and mechanical strength. I. A. Arbuzova is mentioned. There are 6 figures, 1 table, and 9 references: 5 Soviet-bloc and 4 non-Soviet-bloc. The 3 references to English-language publications read as follows: H. Mark, Chem. Eng. News, 27, 138 (1949); S. Loshaek,

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S/191/61/000/004/002/009
B110/B208

Synthesis and properties of...

E. Broderick, J. Polymer Sci., 39, 223 (1959); C. C. Price et al. J. Polymer Sci., 11, 575 (1953).

Legend to Table: Properties of polymers of α- and β-vinyl naphthalenes. 1) Indices; 2) molecular weight; 3) degree of polymerization; 4) specific impact strength, kg·cm/cm^3; 5) heat resistance according to Vicat, °C; 6) tan δ at 10^6 cps; 7) ε at 10^6 cps; 8) method of polymerization; 9) block method; 10) emulsion method; 11) very brittle; 12) note: the study was performed with pressed samples.

(1) Показатели	(8) Способ полимеризации			
	(9) блочный		(10) эмульсионный	
	α	β	α	β
(2) Молекулярный вес	9000	66000	25000	115000
(3) Степень полимеризации	58	428	160	744
(4) Удельная ударная вязкость, кГ·см/см^2	(11) Очень хрупкий	1,6	1	2,5
(5) Теплостойкость по Вика, °С	—	160,5	150	162
(6) tg δ при 10^6 герц	—	$4-5\cdot10^{-4}$	$3\cdot10^{-4}$	$3-4\cdot10^{-4}$
(7) ε при 10^6 герц	—	2,6	—	2,6

(12) Примечание. Испытания проводились на прессованных образцах.

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B110/B208

Synthesis and properties of...

Legend to Fig. 1: Dependence of the intrinsic viscosity of block copolymers of α- and β-vinyl naphthalene with styrene on their composition.
1) copolymer with α-vinyl naphthalene;
2) copolymer with β-vinyl naphthalene;
a) content of vinyl naphthalene in the copolymer, %.

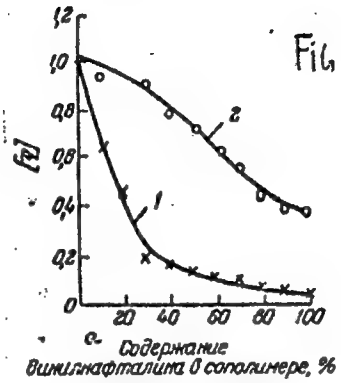

Fig. 1

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Synthesis and properties of...

Legend to Fig. 2: Dependence of the molecular weight of block copolymers of α- and β-vinyl naphthalenes with styrene on their composition. Notations as in Fig. 1. a) Content of vinyl naphthalene in the copolymer, %; b) mean molecular weight, $Mn \cdot 10^{-3}$.

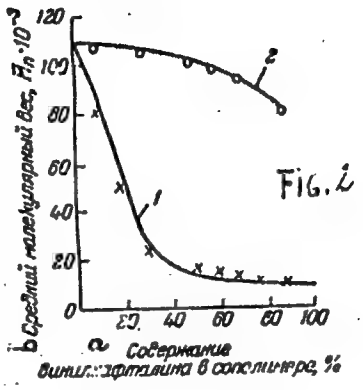

Fig. 2

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Synthesis and properties of...

Legend to Fig. 5: Dependence of the molecular weight of emulsion copolymers of α- and β-vinyl naphthalenes on their composition. Notations as in Fig. 1. a) Content of vinyl naphthalene in the copolymer, %; b) mean molecular weight, $Mn \cdot 10^{-3}$.

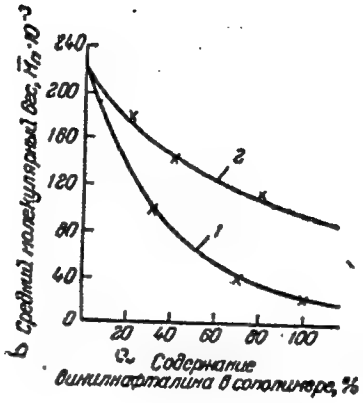

FIG 5

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Synthesis and properties of...

Legend to Fig. 6: Effect of emulsion copolymers of α- and β-vinyl naphthalenes with styrene on their specific i impact strength. Notations as in Fig. 1: a) Content of vinyl naphthalene in the copolymer, %; b) specific impact strength, kg cm/cm^3.

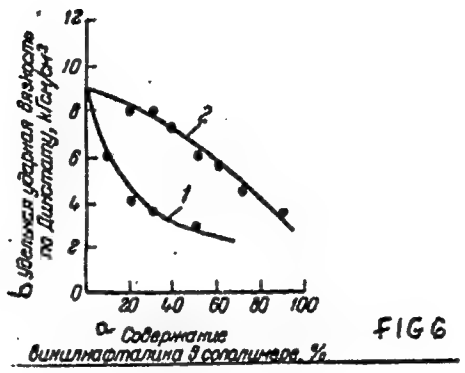

FIG 6

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USMANOVA, N.F.; GOLUBEVA, A.V.; VANSHEYDT, A.A.; SIVOGRAKOVA, K.A.; DOYNIKOVA, S.N.

Synthesis and properties of polymers and copolymers of α- and β-vinylnaphthalenes. Report No.3: Copolymerization of β-vinylnaphthalene with styrene and plastics derived from them. Plast. massy no.5:3-6 '61. (MIRA 14:4)
(Naphthalene) (Plastics)

S/079/61/031/011/007/015
D202/D305

AUTHORS: Skorokhodov, S. S., Yershova, S. G., Mikhaylova, N. V., Vansheydt, A. A.

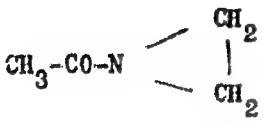
TITLE: Dehydrohalogenation of N-β-chloroethyl acetamide

PERIODICAL: Zhurnal obshchey khimii, v. 31, no. 11, 1961, 3626-3631

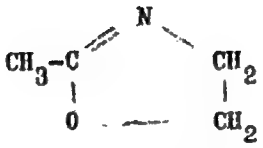
TEXT: The authors, on theoretical and experimental grounds, criticize the works of Hungarian scientists R. Bácskai and L. Halmos, published in Magyar Kémiai Folyoirat in 1954, in which the latter claimed the preparation of secondary N-vinyl amides by dehydrohalogenation of the corresponding β -chloro alkylamides. To substantiate their objections, the present authors repeated the Hungarian experiments. The Hungarians stated that, by means of removing HCl from $CH_3 \cdot CO \cdot NH \cdot CH_2CH_2Cl$, they obtained a vinyl derivative $CH_3 \cdot CO \cdot NH \cdot CH = CH_2$ (I). In the present authors' opinion, 2 other compounds could be formed:

Card 1/3

Dehydrohalogenation of...



(II) and



(III)

Only the compound III was found in the present investigation. The chemical structure of III was checked by the corresponding picrate; the infra-red absorbtion spectrum was determined in CCl_4 solution on ИФС (IVS) and ИКС-14 (IKS-14) spectrometers, using L & F and NaCl prisms; the combined light dispersion spectrum--on the spectrograph ИСП-51 (ISP-51) with a photo-electric recorder. The spectra of the obtained dehydrochlorination product and those of a sample of known 2-methyl-2-oxazoline (cpd. III) being identical. The authors checked the formation of cpd. IV by dehydrochlorination of β-chloroethyl acetamide with sodium methoxide. They also synthesized cpd. II: N-acetoethylene imine by the action of acetyl chloride on ethylene imine and determined its chemical composition

Card 2/3

Dehydrohalogenation of...

and physical indices. The product was unstable and underwent partial isomerisation when distilled at atm. pressure at 150°C into cpd III. There are 2 figures and 22 references: 7 Soviet-bloc and 15 non-Soviet-bloc. The 4 most recent references to the English-language publications read as follows: R. Hart, J. Polym. Sci., 29, 629 (1958); H. W. Heine, J. Am. Chem. Soc., 78, 3708 (1956); H. W. Heine, J. Am. Chem. Soc., 79 907 (1957); P. Fanta, A. Deutch, J. Org. Ch., 23, 72, (1958).

ASSOCIATION: Institut vysoko-molekulyarnykh soyedineniy, Akademii nauk SSSR (Institute of High Molecular Weight Compounds, AS USSR)

SUBMITTED: December 3, 1960

Card 3/3

VANSHEYDT, A. A.; MEL'NIKOVA, Ye.P.; TALLIYER, Yu.A.

Chloromethylation of benzene derivatives and xylenes (m and p) by paraform and hydrogen chloride in the presence of stannic chloride. Zhur.prikl.khim. 34 no.3:705-707 Mr '61. (MIRA 14:5)

1. Institut vysokomolekulyarnykh soyedineniy Akademii nauk SSSR.
(Chloromethylation) (Xylene) (Benzene)

26868
S/080/61/034/004/009/012
A057/A129

15.8080 2209

AUTHORS: Vansheydt, A. A., Gruz, R. I.

TITLE: On polymerization of the cyclic trimer of N-methyleneacrylamide in solutions and crystalline state and on plastics on this base

PERIODICAL: Zhurnal prikladnoy khimii, v. 34, no. 4, 1961, 895 - 902

TEXT: It was determined in the present work that the cyclic trimer of N-methyleneacrylamide (hexahydro-1,3,5-trialkylyl-symm.-triazine) polymerizes in presence and in absence of an initiator (benzoyl peroxide) in solutions or in crystalline state forming infusible three-dimensional polymers. Properties of the latter were investigated and the possibility of manufacturing thermostable (up to 250°C) plastics by heating (160 - 170°C) the crystalline monomer under pressure was demonstrated. Literature data on polymerization of trimethylene-triacrylamide are not sufficient. Even the melting point was not yet determined accurately in works published by M. Gradsten and M. Pollock (Ref. 2: J. Am. Chem. Soc., 70, 3079, 1948), R. Wegler and A.Ballauf (Ref. 3: Chem. Ber., 81, 530,1948) or K. Thinius et al. (Ref. 4: Plaste and Kautschuk, 6, 7, 322, 1959). On the other hand polymerization of this trivinyl monomer is of interest, since little

Card 1/7

On polymerization of the .....

is known on polymerization of trivinyl compounds and no investigations were made on a transfer into three-dimensional polymers in the solid phase. Using the method described by T. Gresham and T. Steadman (Ref. 1: J.Am. Chem. Soc., 71, 1872, 1949) in the present work preparation of trimethylenetriacrylamide was carried out and the melting point was determined as 156.7°C. The amide is difficultly soluble in ether dioxane, carbon tetrachloride and other hydrocarbons, better soluble in water and pyridine, considerably more soluble in alcohols (methanol, ethanol), dichloroethane, and fairly soluble in chloroform. A bromine number of 190.8 (instead of 192.5) was found for the hexabromide of the monomer. Polymerization of trimethylenetriacrylamide in solution was carried out (under assistance of Ye. Ye. Belomyttseva) in boiling alcoholic solutions (Figure 1), and 2.5% (Figure 2) and 5 % (Figure 3) alcoholic solutions at 77.3°C. It can be seen from the results that the polymerization rate in boiling-solutions increases initially with the concentration of the monomer. After 3 hours 30 - 35 % conversion is attained and the polymerization rate remains constant. A 0.1 % benzoyl peroxide admixture causes a second start in polymerization increasing thus the yield considerably. The polymerization in absence of initiator admixtures can be explained by the effect of absorbed oxygen (during preparation and storage of the monomer) resulting in for-

On polymerization of the .....

mation of peroxide groups. Thus storage and preparation conditions effect the polymerization of the monomer. Also the effect of atmospheric oxygen on polymerization was determined (curve III δ, Figure 1). Polymerization experiments at 77.3°C indicate the increase in polymerization rate with the amount of added benzoyl peroxide (Figures 2 - 4). Experiments (carried out in assistance of Ye. N. Shchepkina) with crystalline trimethylenetriacrylamide at 98, 134, 143, and 154°C in dry CO_2 atmosphere demonstrate (Figure 5) an increase in the polymerization rate with temperature. Thus near the melting point of the pure monomer (154°C) a sudden polymerization with increasing temperature (exothermic reaction) is observed. Acceleration of polymerization with 1 % benzoyl peroxide admixture and inhibition by hydroquinone or pyrogallol indicate a free-radical mechanism of the polymerization in absence of admixtures, which can also be explained by the presence of peroxides in the monomer. Corresponding experiments proved that monomers with identical melting points may have a different tendency for polymerization depending on the duration of storage. In determinations of the activity degree of polymerization this must be allowed for. The obtained non-fusible typical three-dimensional polymer is a polyacrylamide with cross-linked methylene groups at nitrogen atoms. This was proved by hydrolysis of the white powdered product obtaining formaldehyde, ammonia and polyacrylic acid. In analogy to re-

... polymerization of the.....

...be it is not fusible and not thermoplastic. The obtained polymer was processed ... 160 - 170°C, 200 - 300 atm, and transparent plates with softening point above ...50°C were obtained. Mechanical toughness was increased by mixing the powdered ...dered polymer with saw dust (1 : 1) and by subsequent compression at 200 - 300 ...m for 10 - 15 minutes at 160 - 170°C. Thus a phenolformaldehyde-like resin was ...ained, stable against organic solvents and strong alkali solutions but not ...table against strong mineral acids, with the following characteristics: static ...nding strength - 630 kg/cm^2, specific resilience (Dinstant) - 3.0 kg·cm·cm^{-2}, ...ermostability (Vick) -> 200°C, tangent of the loss angle for 50 periods ...05 - 0.06, water-absorption in 24 hours - 0.6 - 0.7 %. There are 4 figures and 9 non-Soviet-bloc references.

ASSOCIATION: Kafedra tekhnologii plastmass Tekhnologicheskogo instituta imeni Lensoveta (Department of Technology of Plastics of the Technological Institute imeni Lensovet).

SUBMITTED: July 9, 1960

Card 4/7

VANSHEYDT, A.A.; MEL'NIKOVA, Ye.P.; GLADKOVSKIY, G.A.

Preparation and properties of polyphenylene-type polymers. Part 2: Preparation of polyarylenemethyls by polycondensation of aromatic hydrocarbons with their bis-acetoxy and bis-chloromethyl derivatives. Vysokom.soed. 4 no.9:1303-1309 S '62. (MIRA 15:11)

1. Institut vysokomolekulyarnykh soyedineniy AN SSSR.
(Hydrocarbons) (Polymers)

S/190/63/005/002/024/024
B101/B102

AUTHORS: Penczek, S., Vansheydt, A. A.

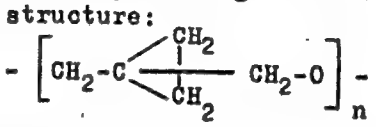
TITLE: Polymerization of bicyclic oxethanes and properties of the polymers

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 5, no. 2, 1963, 296-301

TEXT: The polymerization of 3,3-dimethylene oxethane (I) and 3,3-pentamethylene oxethane (II) is discussed. The polymerization of I was easy and gave a yield of 86% when BF_3 gas acts at -78°C on I dissolved in CH_2Cl_2; concentration of I 4.3 mole/l, concentration of BF_3 0.15 mole/l. The polymer was readily soluble, except in methanol and water. Its intrinsic viscosity was 1.06 $dl \cdot g^{-1}$ in toluene and the number-average molecular weight was ~100,000. Contrary to the data of T. W. Campbell, V. S. Foldi (J. Organ. Chem., 26, 4654, 1961) its melting point was 69.6-73°C. Films of the polymer showed birefringence. It was evident from the IR spectrum that the oxethane group had disappeared after polymeri-

B/190/63/005/002/024/024
B101/B102

zation but that the cyclopropane rings were not changed by polymerization. This resulted in the structure:



In the cold, bromine adds easily to poly-I which moreover reacts readily in the way characteristic of the cyclopropane ring. Mostly this is connected with a degradation of the polymer, e.g., in the addition of Br. The formation of high-molecular I and its degradation in the presence of BF_3 (in the absence of the monomer) confirms the oxonium mechanism of the polymerization. The polymer of II was obtained under the same conditions as that of I. Its intrinsic viscosity was ≥ 1.0, m.p. 153-158°C. The X-ray patterns and thermomechanical curves proved the crystallinity of the polymers of I and II. The polymerization rate (% per min) was for I 11.4 and for II 11.8, thus significantly higher than that of 3,3-bis-(chloromethyl)-oxethane (0.1). From the almost equal polymerization rates of I and II it is concluded that the strain of the second ring has little effect on the polymerizability of bicyclic oxethanes. In 3,3-bis-(chloromethyl)-oxethane, the polymerization rate is reduced by electro-

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B101/B102

philic $ClCH_2$ groups which remove the electron from the oxygen atom.

There are 3 figures and 1 table.

ASSOCIATION: Institut plasticheskikh mass, Varshava (Institute of Plastics, Warsaw); Institut vysokomolekulyarnykh soyedineniy AN SSSR (Institute of High-molecular Compounds AS USSR)

SUBMITTED: June 12, 1962

AUTHOR: [illegible], A. A.; [illegible], F. [illegible]

TITLE: Synthesis of aliphatic-aromatic polymers with conjugated double bonds by the Wittig reaction

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 5, no. 6, 1963, 805-810

TOPIC TAGS: synthesis, aliphatic-aromatic polymers, conjugated double bonds, polyxylylenearenes, polycondensation, Wittig reaction

ABSTRACT: The synthesis of polyphenylenepolyenes by the Wittig reaction possesses [illegible] side reactions taking place. This paper reports on the production of the leading example of such a polymer by polycondensation in the presence of ethyllithium of p-xylylene-bis-triphenylphosphonium chloride with terephthal[illegible]

Card 1/2

L 12432-63

ACCESSION NR: AP3001187

the 1300-1650 range, gave no signal on EPR exposure at room temperature, and showed the presence of [illegible] in the entire [illegible] on segments of the macromolecules. Deep appreciation [illegible] S. S. for discussing the results of the work, and to the workers of the physical laboratories of the Institute of High-Molecular Compounds, AN SSSR, Leningrad, [illegible]

[illegible]

ASSOCIATION: Institut vysokomolekulyarnykh soedineniy AN SSSR (Institute of High-Molecular Compounds, Academy of Sciences SSSR)

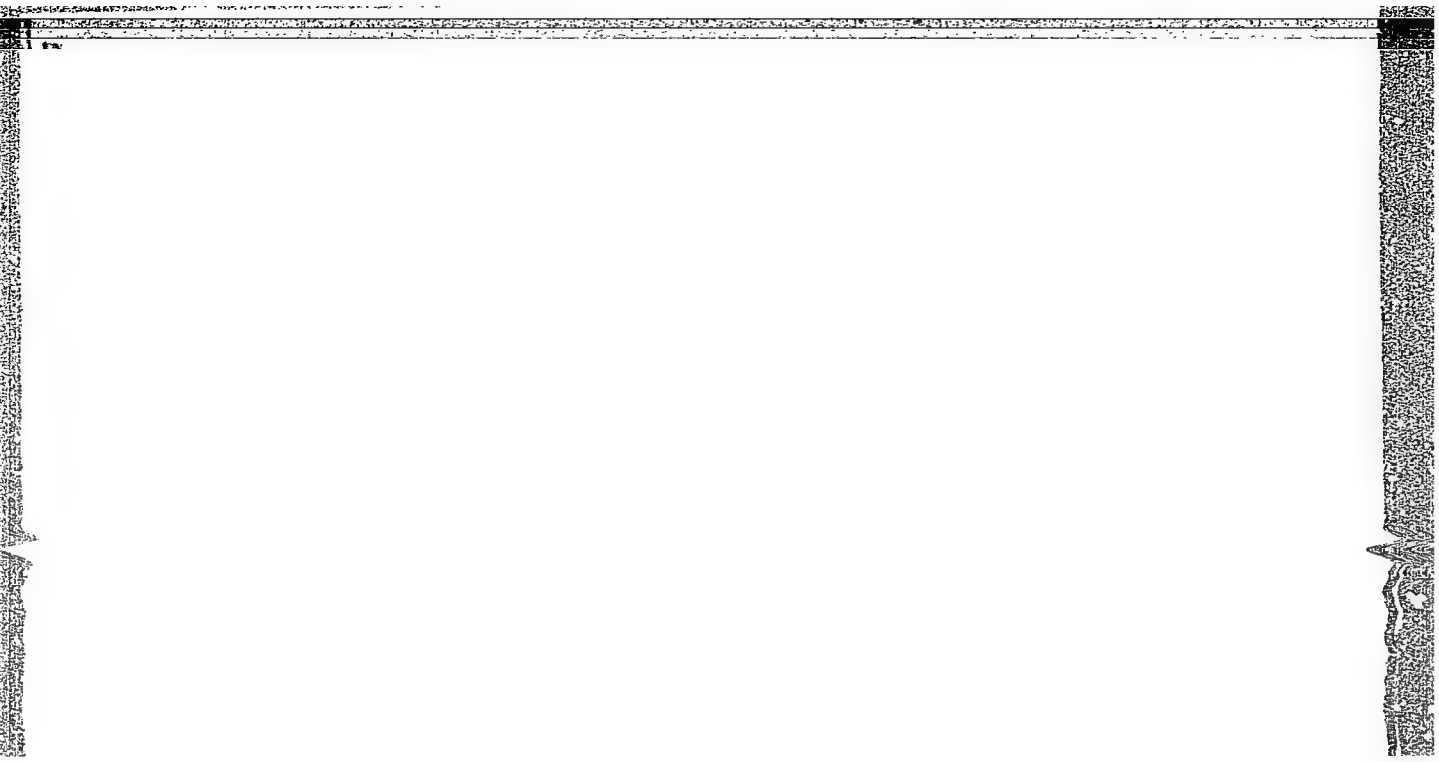
SUBMITTED: 05Nov62 DATE ACQ: 01Jul63 ENCL: 00

SUB CODE: GP NO REF SOV: 011 OTHER: 012

Card 2/2

GRUZ, R.I.; VANSHEYDT, A.A.; KRYUCHKOV, F.A.; POZIN, L.M.; KANEVSKAYA, N.V.

Interaction of alcohols and amines with NN'-methylenediacrylamide and with cyclic NN'N"-trimethylenetriacrylamide. Zhur.prikl.khim. 36 no.6:1307-1314 Je '63. (MIRA 16:8)
(Alcohols) (Amines) (Acrylamide)



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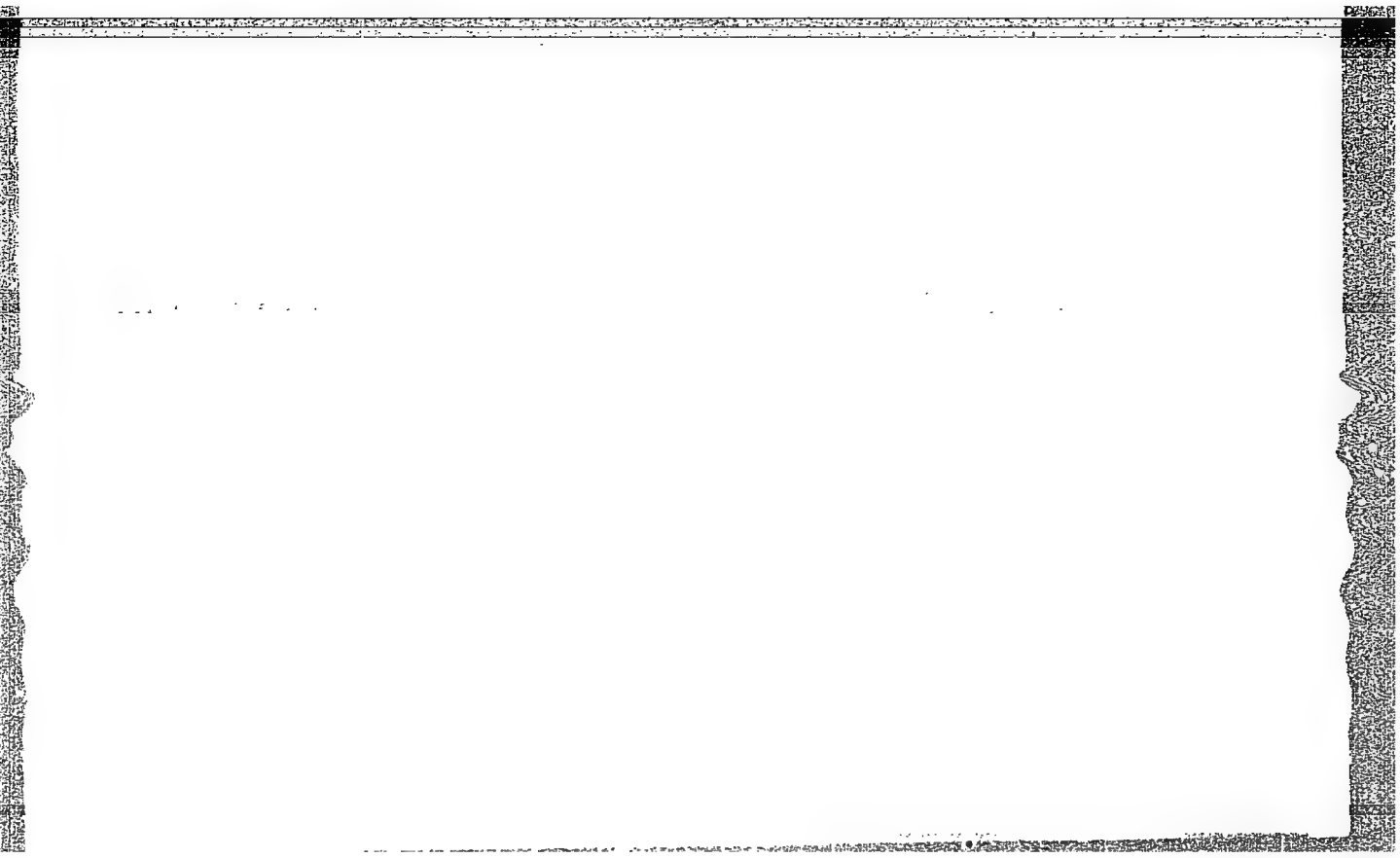

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APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858530007-4"

ACCESSION NR: AP4041803 S/0080/64/037/007/1624/1626

AUTHOR: Kuznetsova, N. N.; Vansheydt, A. A./ Papukova, K. P./ Konyakova, T. N.

TITLE: The polycondensation of phenoxyethylsulfonic acid with formaldehyde and the synthesis of a strongly acid cationite based thereon

SOURCE: Zhurnal prikladnoy khimii, v. 37, no. 7, 1964, 1624-1626

TOPIC TAGS: phenoxyethylsulfonic acid, formaldehyde polycondensation, acid cationite, synthesis, heat stability, ion exchange capacity, mechanical strength

ABSTRACT: Beta-phenoxyethylsulfonic acid, synthesized by the condensation of sodium phenolate with dichlorethane and subsequent treatment of the phenoxychlorethane with aqueous sodium sulfite, was condensed with formaldehyde in aqueous solution even in the absence of catalyst to form a liquid resin which in subsequent heating formed a three-dimensional polymer

$$[C_6H_3(OR)CH_2]_n\left[\begin{matrix}C_6H_2(OR)CH_2\\ |\\ CH_2\end{matrix}\right]_m,$$

where R=$CH_2CH_2SO_3H$.

Card 1/2

ACCESSION NR: AP4041803

This cationite, containing SO_3H groups only on the aliphatic side chains and containing no phenolic hydroxyls, was more stable to aqueous alkaline solutions and oxidizing agents than ionites having phenolic hydroxyl groups. The dark red insoluble cationite has an irregular granular form, sufficient mechanical strength, and an exchange capacity of 4.2-4.3 mg. equiv/l. The optimum reactant ratio is 1:1 to obtain a resin with the maximum coefficient of swelling of 2.5; an excess of formaldehyde reduced this value to about 2. The cationite is stable to heating in water at 100C; its exchange capacity is reduced on heating in air from 100-150C due to the cleavage of the sulfo-group. The cationite is stable to alkali and 1N HNO_3 at room temperature and shows less loss in exchange capacity in 5N H_2SO_4, but is less stable than KU-2 resin in concentrated alkali. Orig. art. has: 2 tables, 2 figures, 1 equation and 1 formula.

ASSOCIATION: None

SUBMITTED: 20Aug62 ENCL: 00

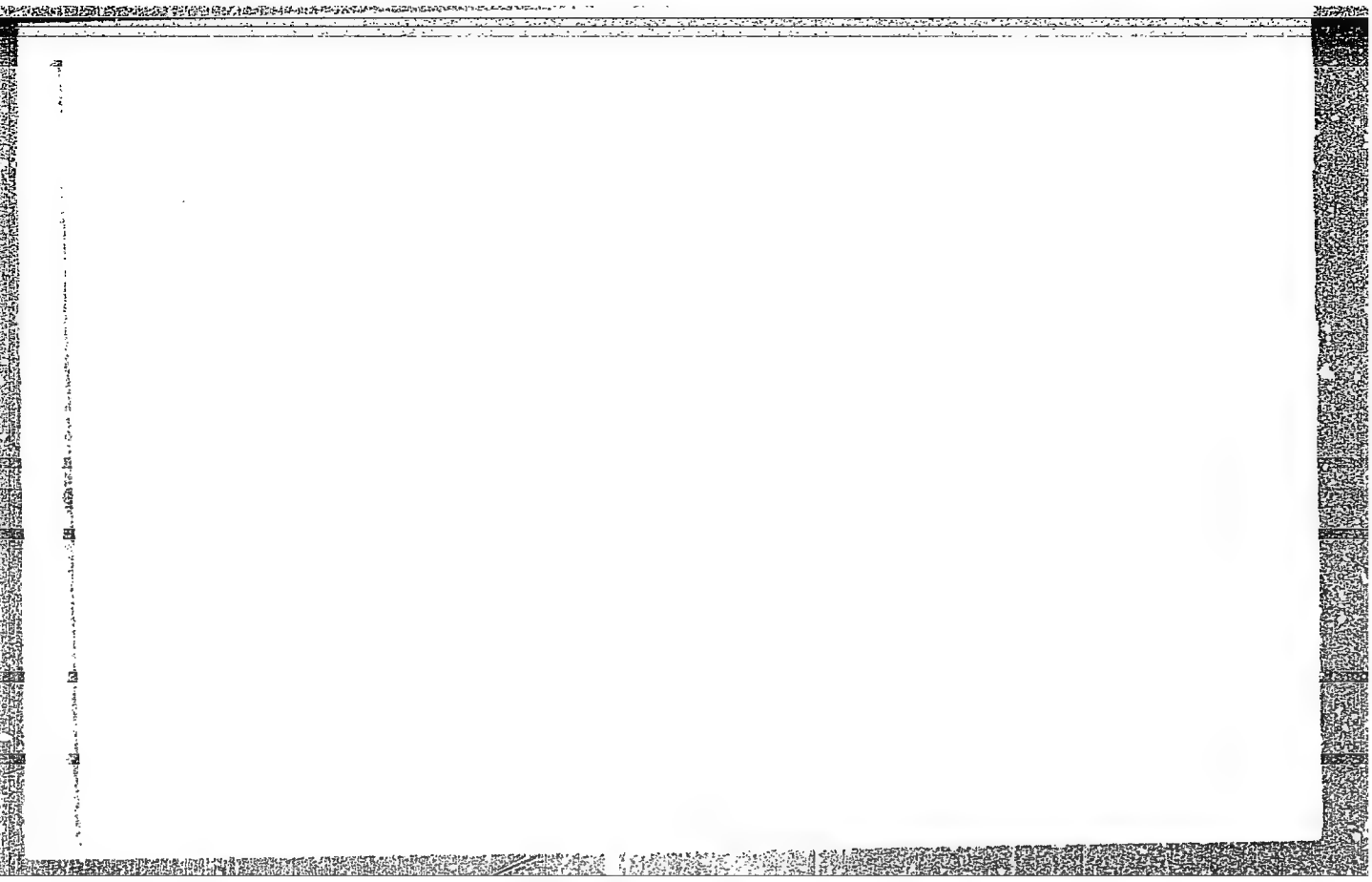
SUB CODE: GC, OC NO REF SOV: 001 OTHER: 002

Card 2/2

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858530007-4

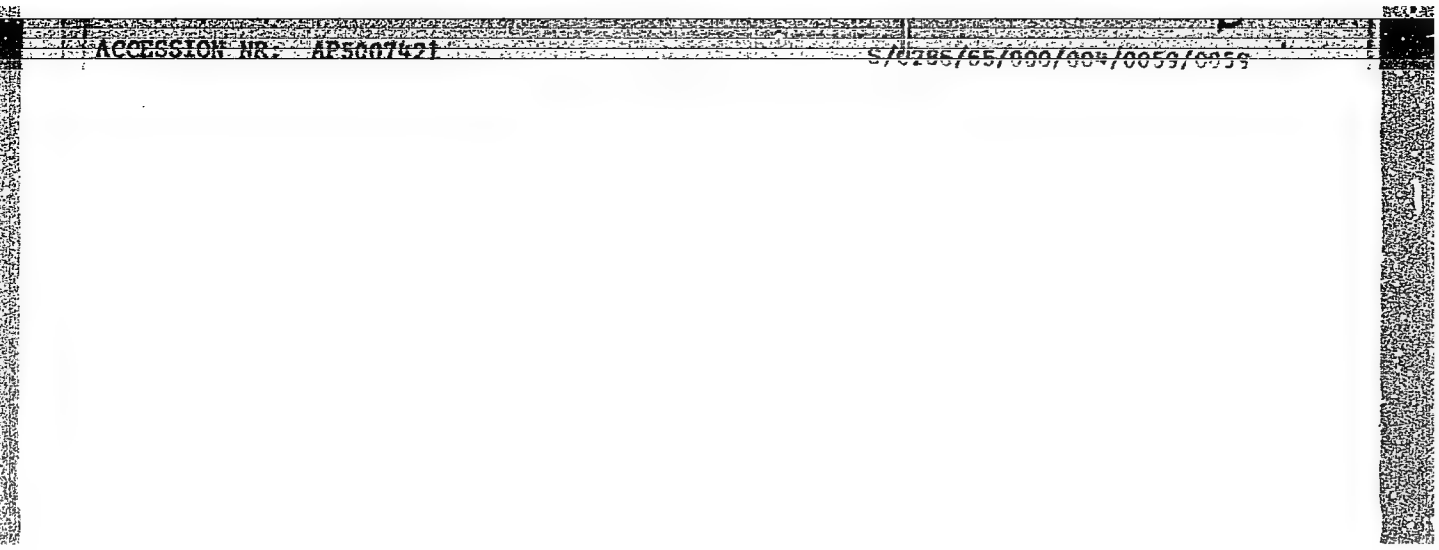
AUTHORS: Kuznetsova, N.N., Vaynshteyn, A.A., Papukova, K.P., Komyakova,

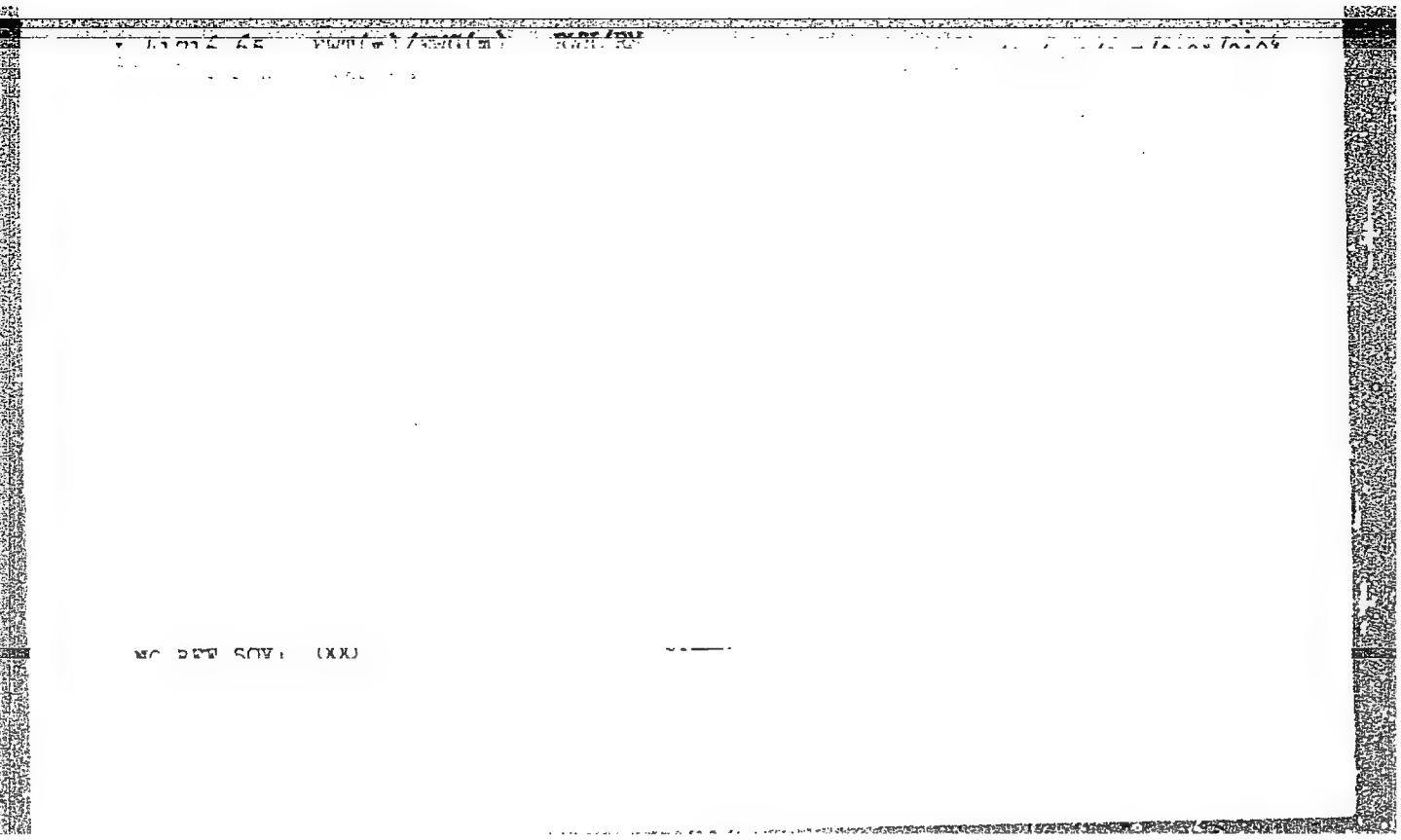
APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858530007-4"



MEL'NIKOVA, Ye.P.; VANSHEYDT, A.A.; SIMANOVSKAYA, S.A.

Synthesis of tri (chloromethyl)-m-xylene and of some products of its transformation. Zhur. prikl. khim. 38 no.7:1629-1631 Jl '65.
(MIRA 18:7)





L 8139-66 EWT(m)/ETC/EWG(m) DS/RM

ACC NR: AP5025025 SOURCE CODE: UR/0286/65/000/016/0081/0081

AUTHORS: Kuznetsova, N. N.; Vansheydt, A. A.; Papukova, K. P. Komyakova, T. N.

ORG: none

TITLE: Method for obtaining cation exchanger containing phosphonic groups. Class 39, No. 173935 announced by Institute for High-Molecular Compounds, AN SSSR (Institut vysokomolekulyarnykh soyedineniy AN SSSR)

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 16, 1965, 81

TOPIC TAGS: cation exchanger, polymer, polyphosphonic resin, phosphorus organic compound

ABSTRACT: This Author Certificate presents a method for obtaining a cation exchanger (containing phosphonic groups) by polycondensation of substituted phosphonic acid with formaldehyde in a sulfuric acid medium, and then by consolidation of the resin-like product. To obtain a chemically and thermally stable sorbent, phenoxyethyl-phosphonic acid is used as the substituted phosphonic acid.

SUB CODE: OC/ SUBM DATE: 22May64

Card 1/1 UDC: 678.672'39'21 661.183.123.2.002.2

L 7884-66 EWT(m)/ETC/EWG(m) DS/RM

ACC NR: AP5025038 SOURCE CODE: UR/0286/65/000/016/0084/0084

AUTHORS: Kuznetsova, N. N.; Vansheydt, A. A.; Komyakova, T. N.

ORG: none

TITLE: Method for obtaining amphoteric ion exchange resins. Class 39, No. 173950

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 16, 1965, 84

TOPIC TAGS: ion exchanger, ion exchange resin, polymer, condensation, polymerization

ABSTRACT: This Author Certificate presents a method for obtaining amphoteric ion exchange resins (containing carboxyl and weakly basic groups) by condensing an equimolar mixture of phenoxy-derivatives of organic acids and alkylphenoxyetnyl derivative with formaldehyde or paraform. To increase the variety of phenoxy derivatives of organic acids, the phenoxy derivatives phenoxyethylsulfonic or phenoxyacetic acid are used, while dimethylphenoxyethylamine is employed as the alkylphenoxyethyl derivative.

SUB CODE: 07 / SUBM DATE: 26Jul62

Card 1/1 nw UDC: 661.183.123:678.83

L 13526-66 EWT(m)/EWP(j)/T RPL WW/RM

ACC NR: AP6002216 (A) SOURCE CODE: UR/0080/65/038/012/2749/2757

AUTHOR: Gruz, R. I.; Vansheydt, A. A.; Strakhova, E. K.

ORG: none

TITLE: Copolymerization of a cyclic trimer of N-methyleneallyloxypropionamide with an unsaturated polyester resin

SOURCE: Zhurnal prikladnoy khimii, v. 38, no. 12, 1965, 2749-2757

TOPIC TAGS: copolymerization, polymerization kinetics, high polymer, copolymer, polyester plastic, resin, thermal stability

ABSTRACT: Copolymerization of the cyclic trimer of N-methyleneallyloxypropionamide (NN'N"-trimethylene-tri-β-allyloxypropionamide) with an unsaturated polyester resin was studied at 65°-150°C, various molar ratios, and in the presence of benzoyl peroxide, dimethylamine, and methylethylketone. It was found that the copolymer resins are stable thermally up to 215-220°C. This is about 50°C higher than for the corresponding copolymers based on styrene. The kinetics of copolymerization of amidoester with polyester resin at 100°C is shown in fig. 1.

UDC: 678.13

Card 1/2

L 13526-66

ACC NR: AP6002216

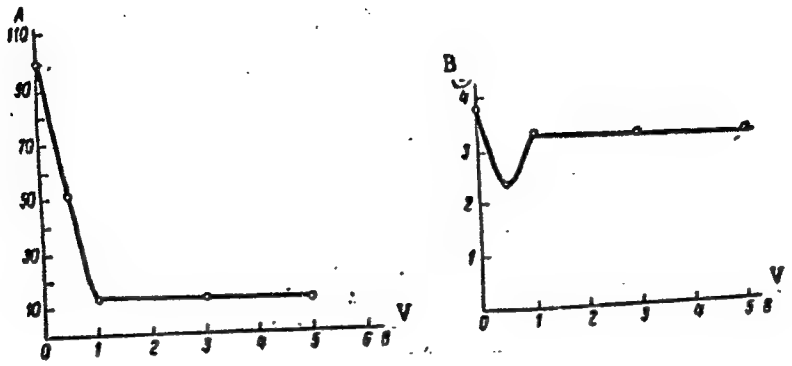


Fig. 1. A--content of solution (%); B--content of nitrogen fixed the gel-fraction (%); V--time (hours).

Orig. art. has: 7 figures, 4 tables.

SUB CODE: 07/ SUBM DATE: 27Dec63/ ORIG REF: 004/ OTH REF: 009

Card 2/2

L 6251-66 EWT(m) SD/HW

ACC NR: AP6030602 (A,N) SOURCE CODE: UR/0413/66/000/016/0092/0092

INVENTOR: Dinabur, V. A.; Vansheydt, A. A.

ORG: none

TITLE: Preparative method for ion-exchange resins. Class 39, No. 185054

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 16, 1966, 92

TOPIC TAGS: ion exchange resin, COPOLYMERIZATION, VINYL COMPOUND

ABSTRACT: An Author Certificate has been issued for a preparative method for ion-exchange resins, involving the bulk or suspension copolymerization of a monovinyl compound, viz., 2-methyl-5-vinylpyridine, and a divinyl amide-type cross-linking agent of the general formula

$$CH_2=C(CH_3)-CONH(CH_2)_nNCO-C(CH_3)=CH_2$$

where n = 2 to 10, in the presence of free-radical initiators [unspecified]. [SM]

SUB CODE: 07/ SUBM DATE: 09Sep63/

UDC: 661.183.123.3:678.746.5-136.5

Card 1/1 mjs

CHERNOV, V.N.; DREVUSH, V.P.; VAN'SHEV, I.F.

Systems of automatic temperature regulation. Mikrobiologiia 32 no.4:727-731 Jl-Ag '63. (MIRA 17:6)

RUSAKOV, Viktor Pavlovich; SHILO, N.A., otv.red.; POTEMKIN, S.V., zam.otv. red.; ALEKSANDROV, P.P., red.; APEL'TSIN, F.R., red.; BEREZIN, V.P., red.; KALABIN, A.I., red.; KUZNETSOV, G.G., red.; MATSUYEV, L.P., red.; NUZHDIN, I.I., red.; FIRSOV, L.V., red.; FOMENKO, T.G., red.; VANSHEYDT, N.A., red.

[Choice of an efficient mining method for thick coal seams of the Nizhne-Arkagala deposit] Vybor ratsional'noi sistemy razrabotki moshchnykh ugol'nykh plastov Nizhne-Arkagalinskogo mestorozhdeniia. Magadan, 1958. 15 p. (Magadan. Vsesoiuznyi nauchno-issledovatel'skii institut zolota i redkikh metallov. Trudy. Gornoe delo. no.18) (MIRA 12:5)
(Magadan Province--Coal mines and mining)

FOMENKO, Timofey Grigor'yevich; SHILO, N.A., otv.red.; POTEMKIN, S.V., zam. otv.red.; ALEKSANDROV, P.P., red.; APEL'TSIN, F.R., red.; BEREZIN, V.P., red.; KALABIN, A.I., red.; KUZNETSOV, G.G., red.; MATSUYEV, L.P., red.; NUZHDIN, I.I., red.; FIRSOV, L.V., red.; FOMENKO, T.G., red.; VANSHEYDT, N.A., red.

[Principles of the ore dressing process with use of concentrating tables] Osnovy protsessa obogashcheniia rud na kontsentratsionnykh stolakh. Magadan, 1958. 35 p. (Magadan. Vsesoiuznyi nauchno-issledovatel'skii institut zolota i redkikh metallov. Trudy. Obogashchenie i metallurgiia, no.27). (MIRA 12:4)
(Ore dressing--Equipment and supplies)

PETROV, Appolinariy Stepanovich; SHILO, N.A., otv.red.; ALEKSANDROV, P.P., red.; APEL'TSIN, F.R., red.; BEREZIN, V.P., red.; KALABIN, A.I., red.; KUZNETSOV, G.G., red.; MATSUYEV, L.P., red.; NUZHDIN, I.I., red.; POTEMKIN, S.V., red.; FIRSOV, L.V., red.; FOMENKO, T.G., red.; VANSHEYDT, N.A., red.

[Production and use of soil concrete blocks in the construction of buildings of few stories] Proizvodstvo i primenenei gruntoblokov v maloetazhnom stroitel'stve Magadan, 1958. 47 p. (Magadan. Vsesoiuznyi nauchno-issledovatel'skii institut zolota i redkikh metallov. Trudy. Mestnye stroimaterialy, no.7) (MIRA 12:5)

(Soil cement) (Building blocks)

ZALABIN, Aleksey Il'ich; SHILO, N.A., otv.red.; POTEMKIN, S.V., zam.otv.red.; ALEKSANDROV, P.P., zam.otv.red.; ALEKSANDROV, P.P., red.; APEL'TSIN, F.R., red.; FOMENKO, T.G., red.; BERZIN, V.P., red.; LUZHNOSOV, G.G., red.; MATSUYEV, L.P., red.; NUZHDIN, I.I., red.; FIRSOV, L.V., red.; VANSHEYDT, N.A., red.

[Underground waters in the northeastern part of the U.S.S.R.] Podzemnye vody Severo-Vostoka SSSR. Magadan, 1958. 85 p. (Magadan. Vsesoiuznyi nauchno-issledovatel'skii institut zolota i redkikh metallov. Trudy. Merzlotovedenie, no.9). (MIRA 12:4)
(Russia, Northern--Water, Underground)
(Frozen ground)